

The MILLING WORLD

and CHRONICLE OF THE GRAIN and FLOUR TRADE.

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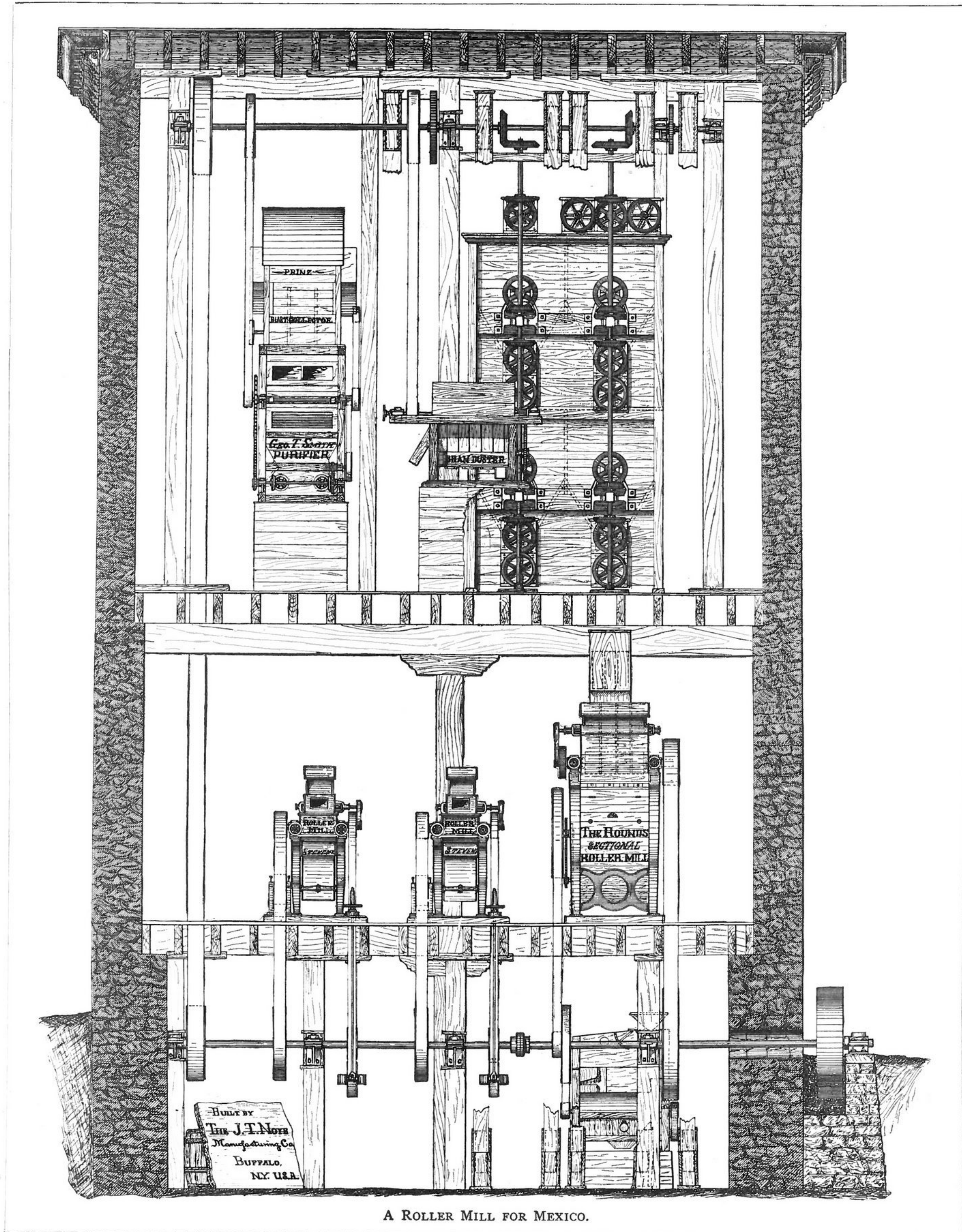
A ROLLER MILL FOR MEXICO.

ON this page appears a plan view of a mill in which about the lowest limit

Pedro Garay, City of Mexico, in accordance with which a mill has been erected in Mexico. This mill is said to be the first roller mill

performed. The rolls in this mill are 9x24 and provided with Stevens corrugations. The finishing work performed on two double

an Empire bran duster, and a California brush and smut machine. This machinery will be driven by 20-horse power engine and



A ROLLER MILL FOR MEXICO.

of capacity for which the system can be employed, is reached. The engraving was made from plans furnished by the Jno. T. Noye Mfg. Co., of this city, to Senor Don

to be built in Mexico. The machinery in the mill, as shown in the cut, includes a 4-break Rounds sectional roller mill on which the wheat reduction and bran-cleaning are

set of 6x12 Stevens rolls, three pair scratch and one smooth. Besides the rolls there are a No. 0 Smith purifier, a Prinz dust collector, a four-reel bolting chest, reels 14x32,

will give the mill a capacity of from 25 to 35 barrels of flour daily. To what extent our manufacturers of milling machinery may be able to work up a demand for

their machines in the Republic of Mexico is a problem difficult of solution, still it is not unfair to assume that, with the introduction of other American goods, this class of manufactures may find a profitable if perhaps limited, field. Should the mill herewith illustrated prove satisfactory in operation and character of product, no doubt others of a similar character will be needed.

IMPORTANCE OF CORRECT PRINCIPLES IN BOLTING FLOUR.

BY C. F. MILLER.

I think that milling, in its varied departments, may be properly denominated a science. There is, in my opinion, no broader field in the manufacturing world, for the profitable employment of a high order of intelligence, skill, and executive ability. The people of right demand pure flour, and the purest, will always be in demand at a profit to the producer, and will also prove most economical, and satisfactory to the consumer. The ambitious operator will earnestly, and continuously strive to reach perfection in the art of milling; and will probably find nothing connected with the business, which will require more careful study, and continued experiment, and which will be more difficult, than a practical demonstration of correct principles in bolting. With the necessary appliances, the wheat may be readily freed from outside impurities, and many of our best practical millers are quite successful in reaching good results in granulation; but it is very evident that comparatively few have shown that they fully understand the principles by which alone the flour can be most perfectly separated from the bran in the process of bolting. Much has been written and published in the milling journals on this subject, and in almost every article written, and every plan, or programme published, I find much to commend, as being correct in principle; but much also to condemn, as being at variance with, and contrary to, the best established principles of separation. Fixed rules, however correct they may be in principle, cannot be successfully applied in every case, but there are a few general principles which have proved to be correct, which admit of general application, and which, if intelligently applied, must lead very nearly to a perfect separation of the flour from all impurities; provided, the processes of scouring, and granulating the wheat, have been accomplished, in the manner indicated in my former articles. Now as to the general rules.

1. There must be ample bolting surface, for the volume of material to be treated, so that nothing need be thrown back as returns, to pass a second time over, or through the same reels, or bolting machines.

2. Every reel, or bolting machine must be so clothed, as to allow impure material to be ejected without carrying with it, any portion of the flour product.

3. Each one of the bolting reels, or machines, from the head of which pure flour is drawn, should be so clothed, further along, that the cut-offs, or that portion of the flour which needs further dressing, may pass to the next succeeding reel, or machine as free from impurities as possible.

4. In order to prevent loss of good material, more or less of which will be found in nearly all the reels, and bolting machines—in the shape of middlings, which will need further reduction, and also for the purpose of tailing over impurities—a piece of coarse cloth of one to three feet in length, should be placed at the tail of each reel, except those used as a final finish.

5. The reels and bolting machines must each have double, and in some instances treble conveyors, so arranged as to allow the operator to use just as much, or just as little of the bolting surface of each as will be required in the different conditions of the weather and of the wheat, to make the most perfect separations.

6. Pure flour drawn from two or more reels, to be thrown together as one grade, should be passed through some kind of device by which it will be uniformly mixed before going to the packer garner.

Modern or gradual reduction milling is so radically different from the old system that immediately following its adoption came the necessity of decided changes in the silks; in the manner of handling the ground material through the bolts; of largely increased bolting surface, and for the construction of special bolting machines, which should be better adapted to handling the usually large percentage of soft stock which is invariably found in roller mills, and which the ordinary reel—whether six, eight sided, or cylindrical in form—could not handle to the best advantage. Since the introduction of these different styles of bolting machines, there seems to be a growing disposition on the part of the manufacturers, and some of the users of them, to discard the use of ordinary reels and to claim that the centrifugal reels and inclined sieve machines, either working separately or both combined, would show better results in bolting than can be shown by the use of the reels and machines combined, but having given special attention to the different systems of bolting for years past and having noted carefully the working of the different machines and appliances used for this purpose, my observation and experience lead me to the decided conviction that until something superior to the machines now in use is provided, we cannot afford to dispense with the reels, and I would advise their use for what is generally termed first bolting, because I believe they are especially well adapted for that part of the work; but for all the soft material, centrifugals and inclined sieve machines will without doubt do better than the reels, and in my opinion, one class or the other used in connection with the reels is indispensable and that the combined use of reels and of the machines mentioned is essential to the attainment of the best results in bolting, both as to quality and yield of flour.

CONDITIONAL CONTRACTS.

HOW'S THIS, MR. BLY.

BY MANUFACTURER.

NOTICE in a recent issue of THE MILLING WORLD an article by Mr. Bly, on the subject of "Liens for Machinery Purchased." In that article there seem to be some things that are inconsistent with the generally accepted ideas upon that subject. Mr. Bly says: "Frequently, also, the sale of machinery is a conditional contract. It is agreed between the vendor and vendee that the title shall not pass until it is paid for, and the law will uphold a sale of chattels made on such condition, although in some States, as in New York, the agreement must be in writing, and filed as a chattel mortgage. In the absence of a statute making a writing obligatory, a conditional sale is valid, whether made orally or expressed in writing." In the next paragraph he says: "As just intimated, however, the difficulty which the furnisher may get into if he relies on a chattel mortgage or conditional sale to protect himself, is the fact that when the machinery is put into place and set up, it may, and usually does, become a fixture and a part of the realty, and the furnisher's security is good for nothing, and the conditional sale loses its force." Now as all machinery must be set up and put in position before it can be used, the counter-shafts must be attached to the ceiling, or floor, and in most cases the machine itself is bolted or screwed to the floor, it follows according to his theory, that all machinery must become a part of the realty, and the furnisher loses his security whether it be a chattel mortgage or conditional sale. Again he says: "If it is put in with the intent of

making it a permanent accession to the building, and of using and adopting it as a part of the machinery and process of manufacturing, such intent will do much toward making it a fixture in the eye of the law." What other purpose could machinery be put into a building for? If the party purchases or agrees to purchase a smut machine, it is for the purpose of cleaning the wheat before converting it into flour. If he purchases a reel it is an accession to his business and intended to be used constantly and permanently, in his business and if we adopt Mr. Bly's theory (if we understand him correctly,) there is really no security that can be depended upon, for the furnisher of machinery, unless he gets his pay before the machinery is put up and in use. It is true he says further along, "that the only safe and secure lien is a real estate mortgage;" but suppose the party purchasing or desiring to purchase, has no real estate, but rents the premises occupied by him, he certainly cannot give a mortgage on real estate that he does not own, and the question here arises if the property is already mortgaged by the landlord or owner of the building, and his tenant puts in machinery and attaches it to the same in any manner, whether permanent or otherwise, would that machinery as being attached to the building become a part of the realty, and liable to sale under a foreclosure of such mortgage? If such is law it certainly is not consistent with justice and common sense. The installment plan is nothing more than one of the forms of conditional sale, and the purchaser obtains no title to the property until the conditions of the contract are complied with, and payments made according to its specifications, and in case of default in the payments as specified in such contract, the vendor has the right to enter upon the premises where such property may be, and take possession of the same. Now, if such contracts are not lawful, it is very strange that dealers will take the risk that they do in the vast amount of property that is sold in that way. Now, if the law does recognize such conditional sales, as applied to sewing machines, household furniture, &c., why not in any and all other cases where machinery is sold in that way. For example, John Doe wishes to purchase of Richard Roe a certain machine to put into his flour mill, the price agreed upon is four hundred dollars. Doe has one hundred dollars which he can pay down, and he agrees to divide the balance into three payments of one hundred dollars each, to run two, four, and six months from a certain date. Roe prefers a conditional sale to a chattel mortgage, and they draw up a contract in substance as follows:

"An agreement made this fifteenth day of January, in the year one thousand eight hundred and eighty five, between Richard Roe, City of Rochester, County of Monroe and State of New York, of the first part, and John Doe, of the City of Buffalo, County of Erie, and State aforesaid of the second part, as follows: The party of the first part in consideration of the promises and agreements hereinafter contained, does promise and agree to sell to the said party of the second part, the machine, (or machinery,) named in the following schedule, at the price set opposite the same, to be paid for by the party of the second part in the manner as hereinafter specified, viz:

[Here insert a description of the machine or of each if there is more than one, with the price of each set opposite the same.]

The whole amounting to the sum of four hundred dollars, which the party of the second part agrees to pay as follows: One hundred dollars in cash when said machine (or machinery) is ready for delivery, and three hundred in three notes to run as follows: One note to run two months from the date of shipment for one hundred dollars, one at four months for one hundred dollars, and one at six months for one hundred dollars from the date thereof, made by the party of the second part, and payable to the order of the party of the first part at the First National Bank of Buffalo with interest thereon, which the party of the second part agrees to pay. The party of the first part further promises and agrees that upon the payment by the party of second part of the aforesaid

notes with interest thereon, at the times, and in the manner hereinbefore specified, the party of the first part or his assigns, will make and execute to the party of the second part or his assigns, a bill of sale transferring said machine (or machinery,) with all the right, title, and interest of the party of the first part therein, to the party of the second part, or his assigns. It is further agreed that the party of the second part may take possession of the machine (or machinery) heretofore mentioned, after the execution of this instrument, and may use the same for all legitimate purposes of his business in the City of Buffalo, County and State aforesaid; but if default shall be made in the payment of the said promissory notes, or any part of either of them with interest, then the same shall become due, or in case the party of the second part, his assigns, or any other person or persons, shall remove the same, or attempt to remove the whole or any part thereof, out of the said County of Erie, or use the same contrary to the provisions of this agreement, then the right of the party of the second part to use or hold the same shall cease, and the party of the first part or his assigns, may enter upon the premises wherever said machine (or machinery) may be found, and take and retain possession thereof. It is further agreed that nothing herein contained shall be so construed as to give the party of the second part any right or title to the machine (or machinery) named in the foregoing schedule, or any part thereof until the sum for which this article calls for is paid, and until such payment is made as heretofore provided, the title of the machine (or machinery) named in said schedule shall continue to be and remain in the party of the first part. Witness our hands and seals.

JOHN DOE. { SEAL.
RICHARD ROE. { SEAL.

Witnesses: { JOHN SMITH.
JOHN JONES.

Now as all contracts that are not made with intent to defraud, or contrary to the welfare of society are supposed to be binding, I cannot see how by any process of law the creditors of John Doe can make any claim to such property, either by execution or foreclosure. There is no doubt but John Doe has an equitable right in such machine, so far as his payments are made, and if he made the first payment of one hundred dollars, and paid the first and second note at maturity and failed to pay the third note, and Richard Roe should take possession of the same and sell it, I think a suit in equity would compel Roe to refund to him all over his claim in the third note with reasonable allowance for expenses and depreciation for the time such machine had been used, although no provision is made in the agreement to that effect. As nearly every manufacturer of machinery in the country is selling more or less goods on just such or similar contracts, a discussion of this subject will be of considerable interest to the majority of your readers.

DUTIES ON CORN IN FRANCE.

As the French Government, writes the Standard correspondent in Paris, has now made known the amount of duty which it will consent to lay on foreign corn, it is of general interest to establish by a comparison with other countries the position France will be in if the Chambers adopt and rectify the proposals of the Cabinet. These proposals are that a duty of 2f. 60c. shall be levied on every 100 kilogrammes of corn imported into France, and that the tax on the same quantity of flour shall be 5f. 20c. There are six European countries—England, Belgium, Denmark, Sweden, the Netherlands, and Russia—in which corn does not pay any import duty at all. In the other European states the import duty on corn and flour expressed in francs and centimes, and per 100 kilogrammes is—Switzerland, corn, 30c., flour, 1f.; Norway, corn, 28c., flour 1f. 71c.; Italy, corn, 1f. 40c., flour, 2f. 77c.; Germany, corn, 1f. 25c., flour, 3f. 75c.; Austria-Hungary, corn, 1f. 25c., flour, 3f. 75c.; Greece, corn, 1f. 41c., flour, 3f. 51c.; Spain, corn, 8f. 20c., flour 6f.; Portugal, corn, 5f. 60c., flour, 8f. 96c.; Turkey, corn, 8f. 10c., flour, 8 per cent. It therefore follows that if, instead of maintaining the existing import

duty of 60c. on corn, and 1f. 2c. on flour, the Chambers vote the Government proposals, and raise it to 2f. 60c. on corn, and 5f. 20c. on flour, bread will not only be dearer in France than in England, Belgium, Denmark, Sweden, the Netherlands, and Russia—where no import duty is levied on corn—but also dearer than in Switzerland, Norway, Italy, Germany, Austria and Greece, where the duty would be lower.

HOW A "CORNER" IS WORKED.

The speculators in the grain markets often engineer a rise or a decline in prices, almost entirely irrespective of the supply on hand or even of the crop prospects. Corn or wheat will frequently be quoted several cents per bushel higher for one month's deliveries than for other months. The newspaper reports may give the cause of these wide fluctuations as a "corner," a "gamble," or the efforts of speculators. Hence it may interest our readers to know how a "corner" in grain is worked.

Corners in grain markets are only possible when there is an excess of short sales. And, if one understands the theory and practice of short sales, he can readily understand the working of a corner. In regular business, when a man sells grain he actually has the grain to deliver, but in speculation a man sells what he has not, with the hope of being able to buy and deliver the goods at a cheaper figure. But every bushel thus sold must be bought back at some figure, higher or lower, before the transaction is or can be closed. And right here is where the mischief comes in. In regular business when a man sells anything that is the end of the transaction, but every speculative sale involves another buying transaction of equal size and amount. And this is called "selling short," because in such deals a man agrees to deliver what he does not yet own, and hence he is short or minus that amount of actual stuff and is compelled to buy at some price. He can buy it the next day or he can defer it a month or longer if he chooses. The man who sold September corn short in August, must buy back all that he sold before the close of September, or pay the price difference in money.

During last August or before, an immense amount of corn was sold short in this market for September delivery. The price of corn at that time was thought to be higher than it would be when September came round. Wheat was so low, and the promise of the new corn crop was so good, that traders concluded there would be a drop of at least ten cents a bushel, and so they all rushed in to secure a part of the prospective profits. And if the market had been let alone they would have come out all right. But after millions of bushels had been thus sold for future delivery, some parties put their heads together and bought up all the cash corn in the elevators and then went into the market and bid up the price, taking all that was offered and still bidding higher for more. Very soon some of the shorts saw the market going against them and began to buy back at a loss what they had previously sold. This, of course, greatly increased the number of buyers and sent the market up faster. After the boom was fairly under way no one dared to sell short any more, and the only corn obtainable after that point was reached was in the hands of the parties who were running the deal; hence they were at liberty to put what price upon it they pleased, provided they bought from day to day all the actual corn which came in over the railroads and all the speculative corn offered. The entire corn supply, therefore, was virtually locked up by the parties running the corner.

Those sellers who filled in or bought back what they sold before the price got too

high, escaped from the trap set for them with but little loss, but many others got mad and vowed they would not buy until they got ready. The parties running the deal could not force the delinquent fellows to buy until the last day of September, but they could force them to put up margin-money enough to more than cover all the difference in price between the low point and the high. Hence a corner always settles itself after a while into a tussle between the victorious longs and the mad shorts, and in this contest the price can be put up to any figure the first party decides upon. The situation and the deal are entirely at their mercy, and the shorts must eventually settle at the price fixed for them by their antagonists, or appeal to the Board of Directors, to come to their rescue and fix a marginal price, which appeal, in this case, was successful, though it is not always so. Such, in plain and untechnical language, is a brief description of the famous corn corner of September, 1884.—Chicago Jour.

WHEAT FREIGHTS.

W. N. Severance, in a series of articles in the Appleton Press regarding freight charges, shows some interesting and important facts. Statistics show that the reduction of freight rates on the principal Eastern roads during the past ten years have been greater than on Northwestern lines in Minnesota. In 1868 the New York Central charged 2.743 cents per ton per mile, and in 1880 the rate had been reduced to .880 cents. On the Pennsylvania and the Pittsburgh, Fort Wayne & Chicago roads, the reduction was .880 cents in 1880 from 1.906 in 1868. On the Chicago & Northwestern the reduction was 1.49 in 1880, from 3.168 in 1868. On the Milwaukee & St. Paul 1.76 in 1880 from 3.10 in 1868. The average freight charges on fifteen leading roads in 1868 was 2.453 cents and in 1880 1.056. Freight rates on Eastern roads were reduced about 66 per cent., while the rates on Northwestern roads during the same time were reduced only about 50 per cent. In 1880 Eastern roads carried three tons of freight the same distance for about the same rates that they charge for one ton in 1868. The general average of wheat rates on the Hastings & Dakota road, on which Mr. Severance lives, is 1.030 cents per ton per mile. At Mitchell, 837 miles from Chicago, the rate is 35 cents per 100 pounds; and from Milbank, 611 miles from Chicago, the rate is the same from Aberdeen as from Mitchell, although the distance is 168 miles less. It is claimed that this difference in rates is the result of competition at Mitchell, and figures are given to show that the same is true at all points reached by opposite lines. Mr. Severance claims that by the transit system the wheat and flour rate from Minneapolis to Chicago is lower than on any of the Eastern roads mentioned. The average rate at which transit is sold is given at 14 cents, which is too low by 1½ cents, as the average price of transit is 15½ cents per 100 pounds, when the flat rate is 17½ cents. This discount is a direct loss to the shipper, who makes it up by reducing the price of wheat in the same proportion. Granite Falls pays nearly double per ton per mile for wheat shipments to Chicago that Minneapolis shippers do, although the difference is only 120 miles. The rates from Appleton to Chicago is 31 cents per 100 pounds for 57 miles, while the rate on flour from Appleton to Minneapolis is said to be 20 cents for 157 miles. The railroad company, through Mr. Boyden, the Northwestern freight agent, disposes of this matter by saying that if they do not get the flour to haul to Minneapolis they will get wheat to haul to Chicago at the full rate. In support of the claim by the railroad companies that

their rates are now as low as on Eastern roads, when the average earnings are considered, the following comparisons are given: The freight earnings of the New York Central, 1,018 miles, were, in 1881, \$8,378 per mile; Pennsylvania railway, 1,010 miles, \$8,840 per mile; Erie railway, 1,010 miles, \$5,151 per mile; and the C., M. & St. P., in and for the State of Minnesota, 1,003 miles, only \$2,117 per mile—as stated in their report for 1883, including freight and passenger. The rates of the Milwaukee & St. Paul in 1880 were one-fifth of a mill of being double the amount per ton per mile on the roads leading east from Chicago.

BISMARCK AND AMERICAN WHEAT.

Prince Bismarck is endeavoring to extend his hog policy to American cereals. It is not that he pretends to have discovered trichinæ in Minnesota wheat, but he grounds his new departure on a desire to ameliorate the condition of the German farming class. In order to do this he has requested the Reichstag to increase the duty upon wheat and rye to double the present tariff rates—excepting only in the case of grains imported from Russia. But as Russia and the United States are virtually the only two countries which supply any large quantity of wheat to German markets, the suggested act resolves itself almost into a direct discrimination against American wheat-growers. It may be that the Chancellor is actuated solely by a laudable tenderness for the farmers of the Fatherland, and that he has no ulterior object in view. But the move seems curiously of a piece with his whole attitude toward the United States of late. The advantages again which the meditated increase of duties would give to Russia, seem also strangely in harmony with the rest of the European policy of the German empire during the last twelve months. Every move which Prince Bismarck has made since the beginning of the year 1884, has tended to draw closer the relations between the empire and the other European powers. He appears to be striving to make himself the acting president of a great Amphictyonic League composed of the chief continental nations; and in reaching at this end he is careless how he affronts the extra-European and English-speaking peoples. Viewed thus in connection with the rest of his line of action, the recently proposed measure shows less like a piece of domestic legislation than an act of foreign policy. But the desired innovation has not been accepted by the Reichstag yet. The farming element is by no means all-powerful in German politics; and, setting aside the fact that a large section of the Reichstag will oppose the motion merely as a matter of personal hostility to the chancellor, it is quite probable that the majority of the members may refuse to burden the mass of the German people with an increased price on breadstuffs merely for the pleasure of gratifying a whim of Prince Bismarck and helping a comparatively unimportant section of the populace over a season of hard times. But the matter is of interest to the farmers of the Northwest as showing them how firm a friend they have in the man of blood and iron.—Farmer's Tribune.

The Time to Build.

"What a splendid time this would be to build a railroad line!" he sighed, as he laid down his paper. "Here's steel rails way down, labor is cheap, car shops hungry for orders, and thousands of dollars might be saved by building now."

"Yes, but what would you do with your railroad after it was built?" queried the man in the seat ahead.

"Do with it? That's another matter, sir—entirely another matter. Get your railroad first, and then look around to mortgage it."

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1½ cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.

SITUATION WANTED.

By a man who has had fifteen years' experience in running grist and merchant flour mills. Address, Wm. H. WOLLERTON, McElhatton P. O., Clinton county, Penn. 411

SITUATION WANTED.

By a young man who has had 2½ years experience in a feed and flouring mill. Address, G. G. MARVIN, West Hebron, Wash. Co., N. Y. 102

SITUATION WANTED.

A situation to learn the millers trade. Am 23 years old. Best of reference given as to character. Address, FRANK VAN VLEET, Tyrone, Schuylers county, N. Y. 1013

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1½ cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 50 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

WANTED.

Traveling salesman, must be a man of experience. Address, GILBERT & JONES, Jamestown, N. Y. 1814

YOU CAN BUY THESE CHEAP.

Three McCully Corn Cob Crushers. The above articles are brand new, in perfect condition, just as they left the factories, and will be sold very cheap for cash. Address S. 30, care THE MILLING WORLD, Buffalo N. Y. 1f

FLOURING AND SAW MILL PROPERTY FOR SALE.

I have two water power flouring mills and two saw mills for sale. All in No. 1 order, and in fine locations for grain, lumber and markets. Persons wanting such property will do well to investigate these. Address, J. H. CRAIG, Baldwin, Jackson county, Iowa. 1114

I HAVE

650 Elevator Cups, 4½x3½, 700 Elevator Cups, 4x3, For which I have no use, and will sell cheap. They were made by W. P. Myer, of Indianapolis, Ind., and are entirely new. If you want a bargain write me. Address, J. S. K., care THE MILLING WORLD, Buffalo, N. Y. 1f

FISKE'S BOLTING REGULATORS

Keep the bolting cloth clean in all kinds of weather and in handling all kinds of stock. Increases the bolting capacity from 25 to 50 per cent., and prevents making specky flour. No shafting, belting or gearing required. Any one can attach it. I have a few of these devices which I will sell cheap. They are brand new. Send for description and price. Address MILL-WRIGHT, care THE MILLING WORLD, Buffalo, N. Y. 1f

PARTNER WANTED.

To remove the machinery of a new three-run mill to a site in a splendid wheat country in northwest Nebraska, with a view to adding new process machinery and elevator. The water power is completed, supplied by springs and not subjected to floods. Mill can be built near railroad track, with the Black Hills and the Northwest for a market. A splendid chance for a man of ordinary means. Address, A. R., care of MILLING WORLD. 18



HOW DOES THIS SUIT?

"Cooch's Bridge, Del., Aug. 25, '84. Messrs. Thompson & Campbell, Philadelphia, Pa.

"Gentlemen: Your machine was sent here against an —, on condition that we should keep the best, and we tried each machine, and are frank to say that if your machine cost us \$500 and the other was offered us as a present we should take yours, as we cannot find a fault with it. The above machine has a capacity of 50 bushels per hour."

We think best not to publish name, but it will be given upon application. Address, THOMPSON & CAMPBELL, Philadelphia, Pa.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO., Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.



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Card of Rates sent promptly on application. Orders for new advertisements should reach this office on Tuesday morning, to insure insertion in the week's issue. Changes for current advertisements should be sent so as to reach this office Saturdays.

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Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or to grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

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NIAGARA AND ITS POWER.

WHAT has become of the scheme of utilizing the current of Niagara river for power? is the query we heard recently. As this is of "home" importance to us, we should be very glad to give the most favorable answer to the question, if that were possible. The power of the current of Niagara river as well as that of the Niagara Falls is undoubtedly destined to play an important factor in the development of the manufacturing interests of Western New York in general, and Buffalo in special, that is—at some future time; but when that future

time will be, nobody can tell just now; it may be before the end of this century, it may be before the end of the next. In order to utilize the current of the river to advantage, something has to be invented which can apply that current directly, without any dam. Niagara river can never be damned completely, and a wing dam will always suffer under the disadvantages of irregularity in the stage of water, as the level of the eastern end of Lake Erie is largely influenced by the prevailing winds, and a heavy southwest storm is able to raise the water three or four feet in as many hours. The mills located along the city front on the banks of the river, obtain their motive power from the waters of the Erie canal, which at this point is between four and five feet higher than the Niagara river, but they always have to make allowance for this irregularity in the level of the lake. If some system to utilize the current, which carries about 20,000,000 cubic feet of water per minute, at a speed of six miles an hour past Buffalo could be invented, the advantages would be manifold. Low water or lack of water would never enter into the calculations here; the supply would be inexhaustible, both summer and winter. We have heard of several inventions lately which claimed to be able to utilize the current itself, but they have not yet put in their appearance in our midst. Such inventions, in order to be of value, must necessitate but small building expenses, for it is a grave question whether, at a coal center like Buffalo, it will pay to erect costly structures in order to utilize the water power, because it may then become more expensive than steam power. At Niagara Falls a race has been cut through the solid rock and a beginning made to utilize the power of the cataract to some extent. But even the power thus made available is used only to a very small part of its capacity by the few mills erected along the banks of the gorge. There seems to be no necessity for the development of water power in this part of the United States, and until that necessity is felt, it will be useless to argue great schemes to make such power available. The originator of the mill race at Niagara Falls spent his fortune in its construction and had to sell finally for a mere pittance. With this example before them, capitalists will think twice before investing money in similar schemes for the utilization of the river current, and while we do not doubt for one moment that a future generation will not permit this immense power to run to waste constantly, we are equally certain at present that as long as the price of coal is so cheap in Buffalo, no costly works will be erected to make the water power available, and our sole hope, in this direction, lies in the discovery of a motor which can transmit the power of the current directly.

RIDICULE was heaped upon the governor of Minnesota who ordered, some years ago, a day of prayer for the disappearance of the locust plague. A similar case is now reported from Melbourne, where the Bishop has ordered prayers that the rabbits, which are at present the worst plague of Australia, may, by an act of Divine Providence, be prevented from bearing any more young. It is undoubtedly a very convenient method to "throw your burthen upon the Lord," but as we are also told that "the Lord helps those who help themselves," it seems quite certain that the good Bishop's prayers will be of no more avail to the destruction of the rabbits, than the Minnesota Governor's prayer was for the driving away of the locust. The course pursued at that time by the United States government, i. e., the appointment of men of recognized ability to investigate the life history, breeding places, foods, etc., etc., of pests and, in the light of such knowledge, devise means for their destruction, could undoubtedly be imitated

with profit by the Australian government, and may result in the desired end quicker than anything else that could be devised.

THE Iowa State Railway Commission seems to understand that legislation is not the all-important factor in the regulation of freight rates. In their annual report they state that "if it be true that corn is now used as fuel, a reduction of rates would set grain in motion eastward and coal westward." By the way, have any statistics ever been collected as to the quantity of coal annually burned by western farmers as fuel, or are small quantities used at odd times for that purpose, magnified into vast proportions to serve the purpose of a "horrible example" to show to what base purposes useful articles can be degraded by the stubbornness of some grasping railroad monopoly? It would almost appear as if farmers, who, we are told, burn corn as fuel year after year, would be able to grow a grove of trees with less labor and still less expense for the same purpose. A few reliable figures would shed a very useful light on these vague and indistinct statements.

A NEW departure, and a very sensible one, in relation to exhibitions, is reported from Hungary. Budapest will hold an industrial exhibition, with special reference to the milling industry during this year, and the Lower House of the Hungarian diet suggested, at a recent meeting, that official invitations be addressed to all foreign newspapers, asking them to send representatives to the opening of the exhibition in May. Who, in view of this fact, will care to deny that the power and influence of the press is not only on the increase, but is also more and more recognized even by the most conservative bodies.

A HANDSOME illustrated catalogue has been received by THE MILLING WORLD from Messrs. Edw. P. Allis & Co., of Milwaukee. It contains all the necessary information about standard flouring machinery tables of dimensions, shipping weights and prices; also a catalogue of flour mill and engine supplies embracing nearly everything needed in mill or engine room. It is bound in a handsome flexible cover, and will take its proper place on the shelves of the library of the editorial sanctum.

THE lamentations of the Irish millers that American competition is killing them as seen in the large numbers of mills standing idle throughout the country are met by competent authorities with the consoling assurance that their own backwardness is the primary cause of the decay of the Irish milling industry, and that the millers of Ireland will have to keep up with the progress of the time and adopt modern milling systems, before they can entertain any hope of recovering the lost ground.

NOW that we are told that the German Parliament has commenced in dead earnest to discuss the question of grain tariffs, we will undoubtedly soon be treated to some interesting data representing both sides. The motion is to treble the present duties on all cereals but rye, which is to be doubled, in order to "protect home industry," and relieve the wants of the agricultural population. What the final action of the government will be, nobody can foretell at the present time.

THERE is nothing like a paternal, monarchical government; a government which is supposed to correct all evils and allow the individual being to put his hands into his pockets with the most child-like confidence in the ability of his government, to think and act for him. As an example, we

are told that the council of the city of Vienna has appointed a commission to inquire why bakers persist in selling dear bread when wheat is so cheap.

RUSSIAN grain merchants are justly alarmed at the growing competition with American and Indian wheat, and try to devise means to enable them to survive in the struggle. The feeling is almost universal, and no less than three mercantile and scientific societies of St. Petersburg held public lectures and discussions of the subject during the first week of the present month. Such wholesale agitation ought to be productive of some results, even if only to show their uselessness.

THE constant cry of overproduction in wheat which has of late been sounded so loudly and so often, seems to find its answer from an unwished-for quarter. If reports are true, the late inclement weather has destroyed 20 per cent. of the winter wheat in all the wheat producing States. Such a reduction in crops ought to meet all the desire for a curtailment of production, and satisfy all the croakers who constantly proclaim that the United States grows too much wheat.

ROLLER milling is certainly finding more and more favor, not only in Europe and America but also with our antipodes. Australia is making quite rapid progress in that direction and now East India is beginning to understand that modern milling is something very desirable and erects a roller mill at Bombay. What will our British brothers of the dusty fraternity say when the much discussed Indian wheat finally also arrives in England in the form of flour?

NOW that some of the Western railroads have reduced their freight rates on grain, the elevator men begin to give rebates on storage charges, and reports from Milwaukee as well as from Chicago state, that steps towards that end have been inaugurated. With the present low prices one or two cents per bushel, more or less, should make quite a difference to grain shippers.

THE latest wrinkle in the Chicago Board of Trade is the question of trading in 1000 bushels lots as a means to increase trade. Our 'change knowledge is not profound enough to comprehend how the state of trade could be influenced by any such action, but as it is withall possible that others can, we record the fact for what it is worth.

THE Millers' Gazette recommends to British millers the adoption of the American system of mill rules consisting in a division of labor, and attributes the uniform standard of American flours to the fact that in all large mills separate individuals are each responsible for the work done by particular machines.

THE different commercial bodies of New York city are making special efforts to save the bankrupt bill pending in Congress, from threatend oblivion. How successful they will be in their endeavors will soon be seen, but grave doubts are entertained about the passage of the bill.

THE reports which arrive from the Hudson Bay stations are anything but encouraging, and the project of a passage to Europe, 1,000 miles shorter than any other, by this northern route is on a fair road to be abandoned.

INCREASED business activity is reported from Toronto; grain arrives in good quantities on the markets and farmers are making in return large purchases, thus giving great satisfaction all around.

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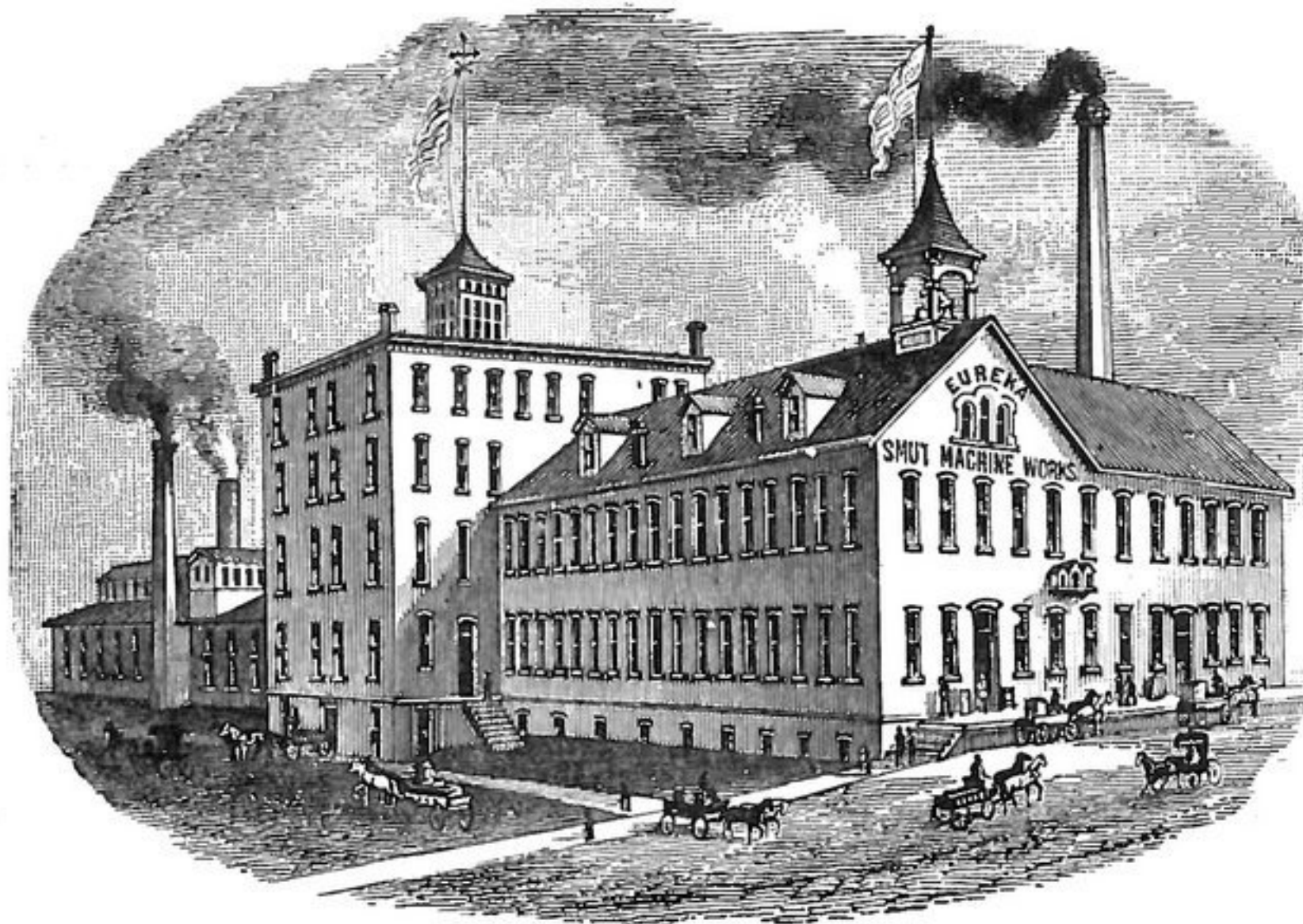
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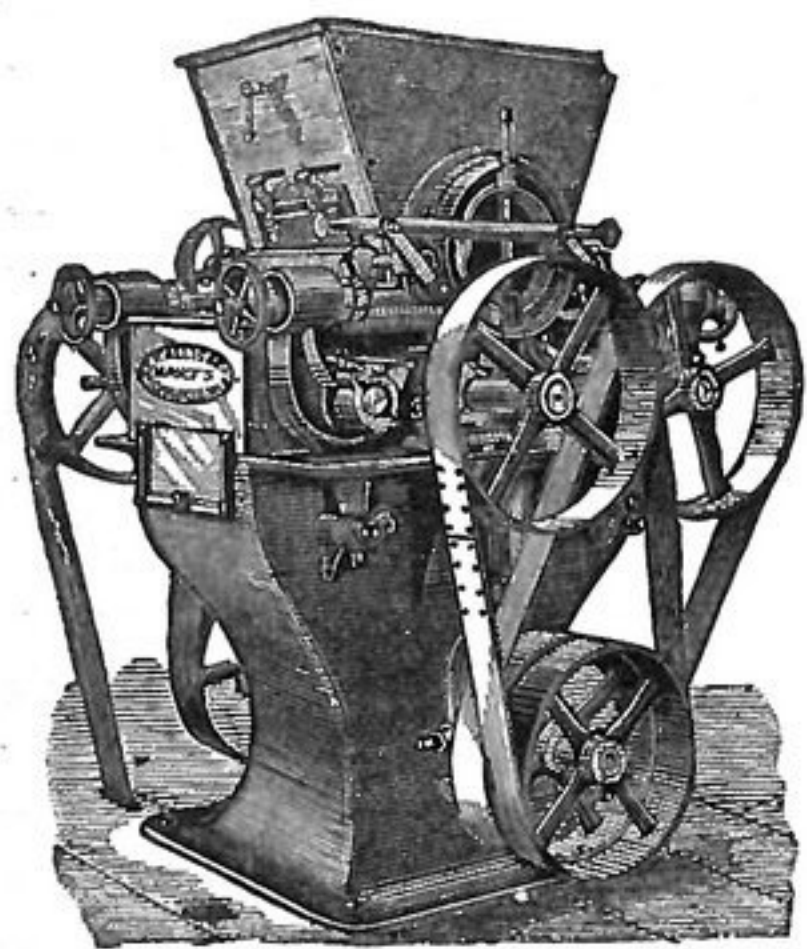
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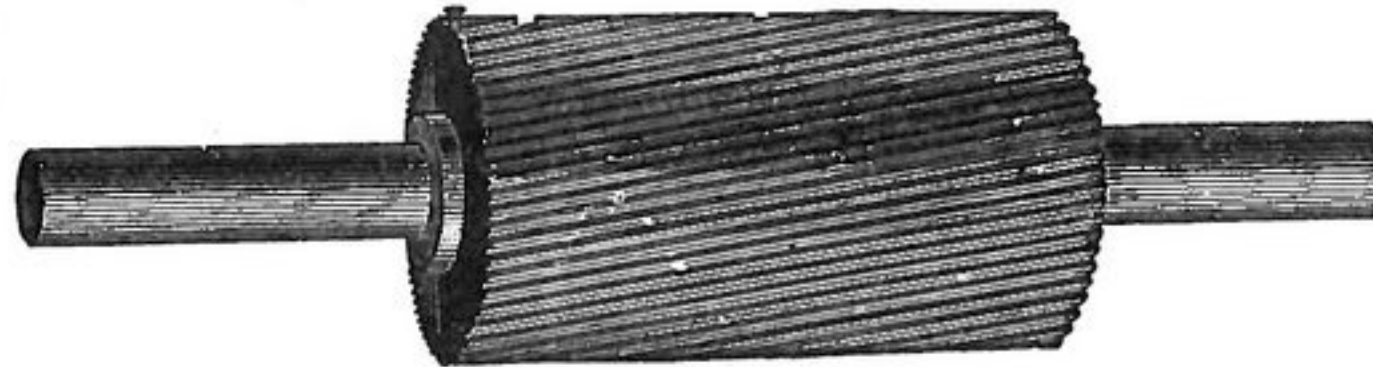
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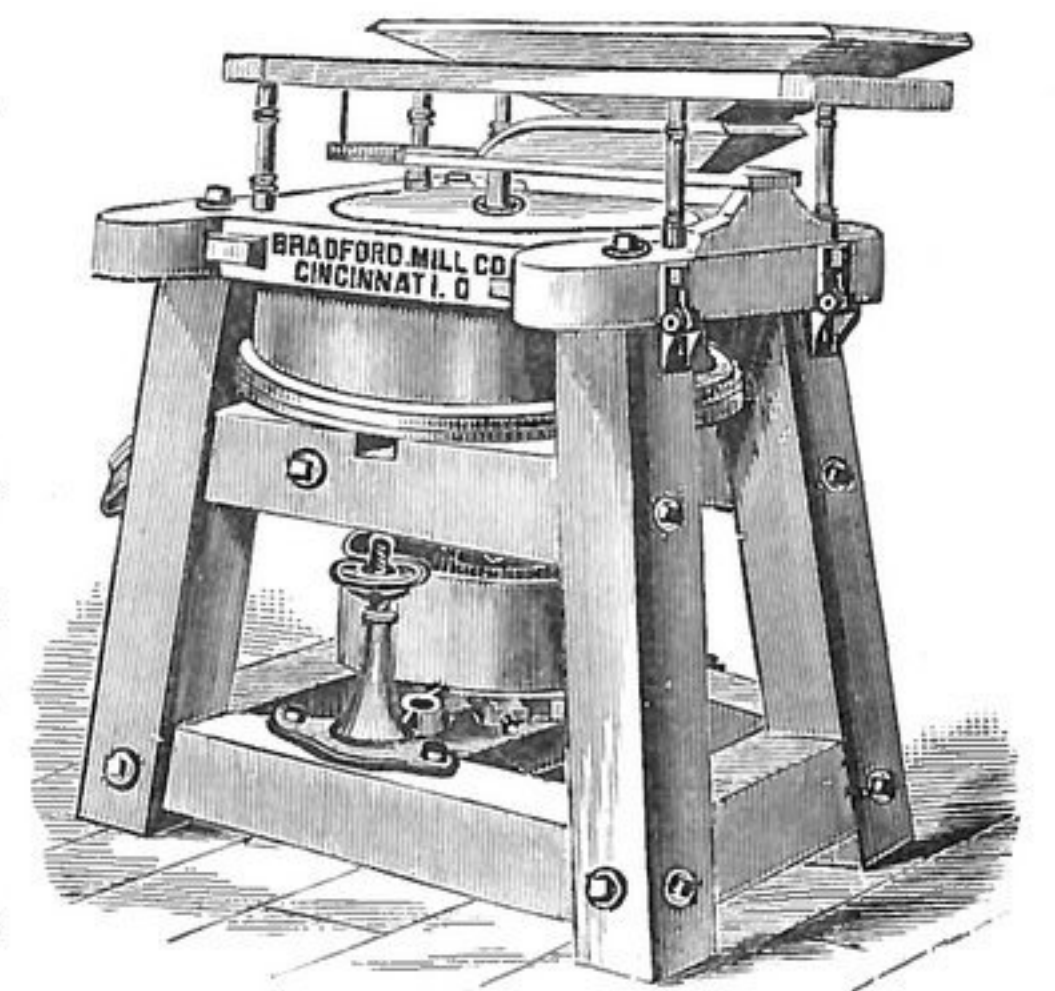
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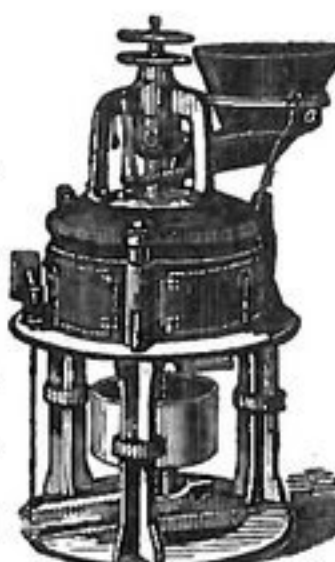


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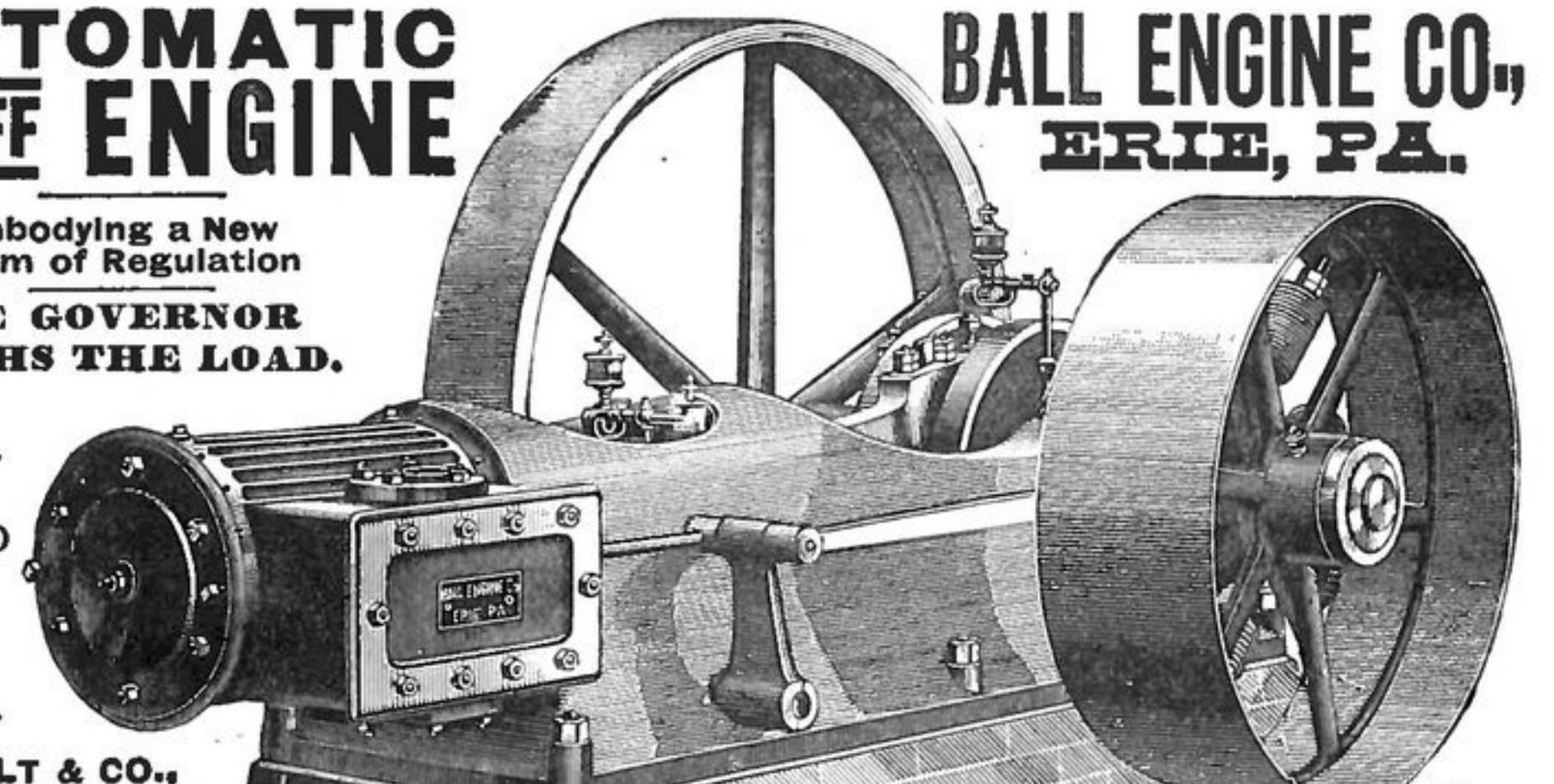
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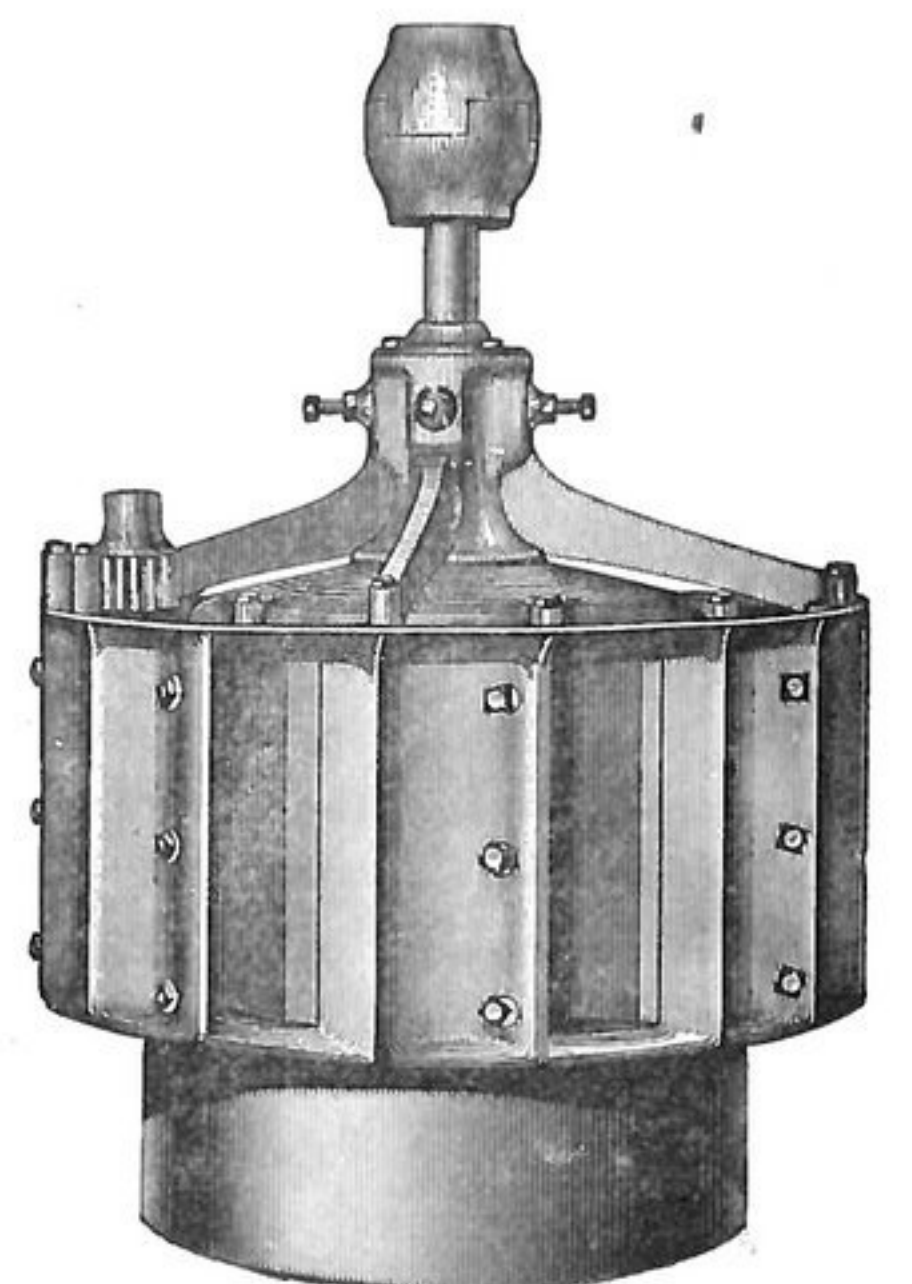
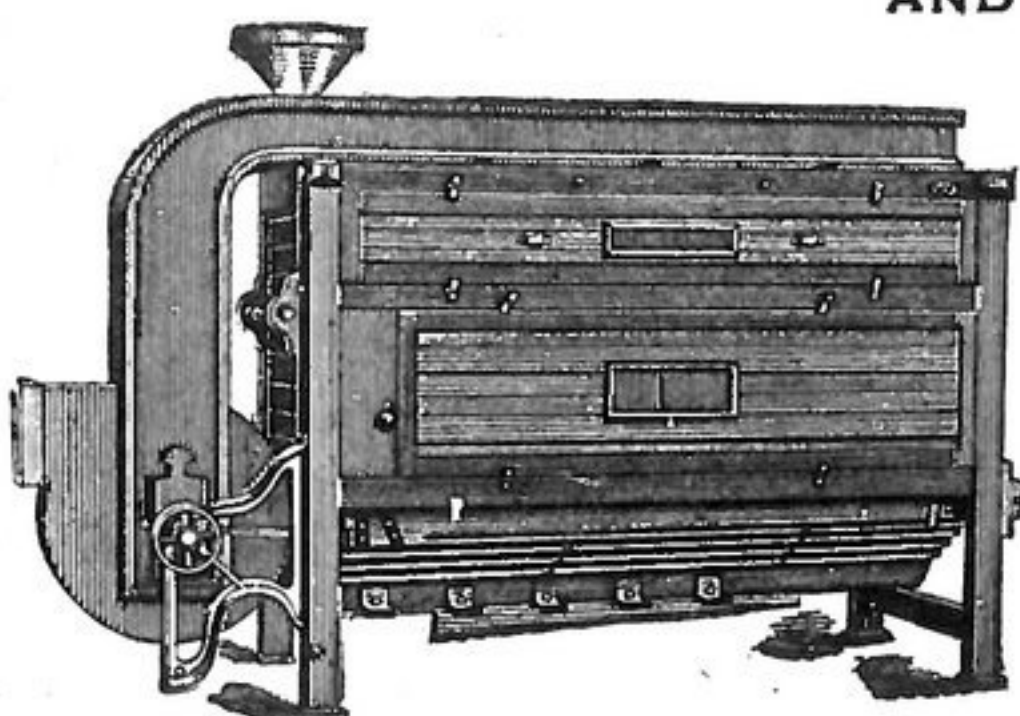
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DUST-CATCHER.

Letters Patent No. 311,036, dated Jan. 20, 1885, to Charles G. Rollins, of Minneapolis, Minn. This invention relates to improvements in that class of dust-collectors which are employed in mills for freeing the dust-laden air discharged from middlings-purifiers and other machines from the dust or solid particles which it contains. As dust-collectors are ordinarily constructed, the dust-laden air is sifted or strained through filter-cloths, which intercept the dust and permit the air to pass through. The meshes of the filter-cloths become filled with dust, and hence it becomes necessary to provide jarring or brushing devices for removing the dust from the cloth. Moreover, it is found impracticable to remove the dust by jarring or brushing the filter-cloths while the air is passing through them, and hence it becomes necessary to provide devices for cutting off the air-current from all or part of the cloths while they are being cleaned. The object of this invention is to provide a dust-collector which shall effectually filter or strain the dust from the dust-laden air passed into the dust-collector, and to dispense with all devices for cleaning the air strainers. By "filtering" or "straining" the air is meant passing it through a medium which, while it allows the air itself to pass through, intercepts the dust or fluff carried by the air and does not allow it to pass through such medium. To this end the invention consists, generally, in the construction, combination, and arrangement of devices described in the specification. On a suitable supporting-frame is a chamber of any suitable size and shape, with its inclosing-walls. A spout or pipe is provided through which the dust-laden air from the milling machinery is conducted into the chamber. The walls of the chamber, or portions thereof, are composed of metal plates. These plates are provided with fine perforations, which are usually formed by puncturing the metal, thereby leaving lines or flanges, which, when the plates are in position, extend inwardly into the chamber. These perforations are very fine, the space between the edges of the lips being too small to allow the passage there-through of the dust contained in the air introduced into the chamber, while permitting the escape of the air. The plates are preferably arranged in an upright position, and the dust which is intercepted by the plates slides down over the smooth surfaces of the projecting lips and over the smooth surfaces of the plates between the rows of perforations. The collector is thus self-cleaning, and no brushing, jarring, or other cleaning devices are needed, and it is not necessary at any time to cut off the air-current from the collector or from any part thereof. The collector is thus more efficient, as it never becomes clogged with dust, and is more simple in construction than those heretofore in use. In some instances the flanges may be omitted, the inside of the plates being smooth; but in this case the perforations should be as fine as the spaces between the lips are in the other case. The metal plates are arranged in pairs, being secured at their upper edges to the opposite sides of longitudinal beams, which are supported on the frame. The ends of the chamber are closed by vertical walls. Below the lower edges of the plates the sides of the chamber are inclosed by suitable walls. The plates form the side walls of the upper part of the chamber. Under the lower edges of the plates are slanting boards. A small opening is left at the bottom between every two boards, and

through this the dust falls into spouts which are mounted or supported upon a frame or series of bars, suspended from the inner walls of the chamber by straps, which leaves the frame free to oscillate. A shaft is journaled within the chamber, and carries cams or eccentrics. A pulley is keyed upon a shaft, and adapted to receive power through belt from any suitable motor. As this shaft is rotated a reciprocating motion is imparted to the spouts, and the dust collected within said spouts is fed into other or discharging-spouts through which the dust passes from the chamber. It is preferred to form the perforations in the metal plates in a series of parallel rows extending across the plate, and to arrange the plates in the dust-collector with the rows of perforations extending vertically, so that there will be no obstructions to the downward movement of the dust intercepted by the metal plates. The metal plates are provided with perforations, which are narrow slits in the metal; but in some instances round perforations or punctures may be used. In order to guard against the possibility of any dust escaping through the dust-collector, the chamber or a part of the walls thereof is sometimes surrounded with other metal plates. In one view the inventor has shown three sets of plates arranged one over another, and with the perforations of one plate opposite the unperforated portions of the contiguous plate or plates. With this arrangement, if any of the dust should possibly get through the first plate, it would be collected by the succeeding plate or plates. In some instances the dust-collector is located immediately over a middlings-purifier, with the casing of the purifier communicating directly with the dust-catcher. The dust and fluff carried up by the current of air passing through the middlings is intercepted by the metal plates, while the air passes through the fine perforations in the plates. Any suitable forcing or induction means may be used for conveying the dust-laden air from the purifiers or other milling machinery to the chamber of the dust-collector.

AMERICAN VS. RUSSIAN CORN IN IRELAND.

Our Consul at Londonderry transmits to the State Department some observations concerning the trade of that port in breadstuffs, which deserves the attention of shippers. The quantities of corn imported from the United States and the quantities imported from the ports of the Black Sea during the years indicated are given as follows:

Year.	From the Black Sea. Tons.	From the U. States. Tons.
1879.....	2,313	67,097
1880.....	.....	60,952
1881.....	3,993	44,818
1882*.....	28,543	28,543
1883.....	10,349	43,848
Nine months of 1884.	23,880	18,805

*There is evidently a mistake in the imports for 1882, as given by the Consul, both columns agreeing exactly.

"One cause of the decadence of the trade in the American product, as shown by this statement, is the difference in the terms offered by the Greek and American merchants respectively dealing in this cereal. The former," says the consul, "sells on what are known as 'the rye terms,' which are to the effect that his goods shall be at the port of consignment of the quality or grade represented, and that any portion found otherwise shall be submitted to arbitration for determining the detriment or difference to be subtracted from the price. The American dealer, on the other hand, sells by the inspector's grading, whose certificate attends the bill of lading and bills drawn for the price. The consequence is said to be, and may easily be supposed to be, that a larger proportion of damaged cargoes is found among those coming from the United States than among those coming from the ports of the Black Sea. The loss

in the former case falls entirely on the purchaser, who has no remedy, while in the latter it is deducted from the price by the award of the arbitrators. It is impossible to suppose that the manifest advantage of these last-named terms should not prevail, even against some difference of price in securing a preference for the market that is governed by them.

"Nor should it create amazement that parties suffering irreparable loss through damaged cargoes should express themselves with some force against the usages of trade that leave purchasers so exposed to losses; nor that they should denounce the system of inspection as wholly illusory as regards the security for which it is colorably designed; nor that they should affirm that at times when the stocks of maize in port are small the pressure for 'grade' is too strong for resistance, and that it does in part prevail, if not to the extent of covering whole cargoes with false certificates, at least so far as to admit a portion of unseasoned corn sufficient to destroy the remainder on the voyage, and that in the flush of large transactions attention to details becomes relaxed, with similar consequences. And, finally, that the great and skillful care demanded in the selection of maize for shipment is the natural growth of personal interest and responsibility, and cannot with confidence be expected to be found in mere functionaries."

TRADING ON 'CHANGE.

These be troublesome times, says the Globe Democrat, for the St. Louis speculator, or, at least, the times are troublesome as compared with those which it has been his lot to meet within the year past. But the soul of the St. Louis speculator is superior to trouble, as a rule, for he usually has his customers well margined, or, if he happens to hit the wrong side of the market himself, he bobs up serenely in a day or two on the "hundred-cents-on-the-dollar" plan, and he goes right on trading as though there was no such thing as adverse fortune or a declining market.

The person who suffers most from a sharp reaction in the market is not the speculator, but that plump specimen of surplus avoirdupois who three times a day hovers over the excited crowd on the Call Board wildly waving a big gavel and wheezing out "Last Call" every few moments as he holds it poised in mid-air. A busy day on 'Change is a busy day, indeed, for Joe Carr, and that worthy gentleman usually retires from the afternoon Call in a demoralized condition, and is obliged to solace himself in the summer season with a trip to the Grand Avenue Park where, with Uncle Isaac Smyth, and a few other choice spirits, he beams upon the emerald diamond with the full appreciation which is born of an utter inability to cope with the game himself. If there is any one but Joe Carr who can make head or tail out of that Babel of sounds that issues every day from the southeast corner of the Exchange he is yet to be found. To single out a diminutive dealer from the rest of the wildly gesticulating mob, and while the mingling cries of "Sell at a half," "Give three-eighths for a hundred thousand," "Sell on the split," "I sold him ten," "Joe! Joe! Joe!" go sailing heavenward to be able to appreciate the fact that one broker wants to sell 20,000 bushels or any part at 84½¢ per bushel, is something that the ordinary eye and ear would utterly fail to accomplish. But the caller handles this hot shot as though he were a professional juggler, and as he slaps 10,000 bushels of May wheat at Francis and credits Samuel with the sale, he blandly announces that Anderson is perfectly willing to dispose of 1,000,000 bushels in large or small quantities at just the same figures. This is genius.

The pork corner, where the caller holds forth after his efforts in the grain line have

well nigh exhausted him, is a graveyard in silence as compared with its cereal sister. Probably the presiding genius, Michael McEnnis, is opposed to sensationalism. However that may be, the pork call usually goes off like this: "January pork, no bids, no offers; last call! February pork, \$12.20 bid, offered at \$12.32½; last call!" and so on to the end, while Frank Galennie fingers his beard and occasionally makes an attempt to buy something at 25 cents below its value, and the rest of the broker fraternity stand idly around.

The method of trading on both "Calls," as they are known, is the same. In the main the transactions are of a hazardous nature, though called "speculations." One member offers to sell 5,000 bushels of wheat for delivery in May at a certain price. Another bids something a little below. The caller makes known the bid and offer, and within a minute perhaps they have come together, and a trade results. The caller says: "Fivefrancetofraleyatnight," and continues his sing-song. The transaction that has just been recorded is the sale by the D. R. Francis & Bro. Commission Company to the Fraley-Carter Commission Company of 5,000 bushels May wheat at 94½¢. In other words, Francis agrees to deliver to Fraley between April 30 and 3 o'clock p. m. of May 31, 5,000 bushels of wheat graded No. 2, St. Louis inspection. And he does deliver it—on paper; for by noon of next day, probably, Francis has bought and Fraley has sold that same 5,000 bushels of wheat and 100,000 bushels more. But it amuses them to do it, and every time they mark down one of those little transactions on their cards it means \$6.25 in their pockets—as a rule. Occasionally they grow rash and take "a deal" for themselves, in which event it is as likely to cost them \$500 as to net them \$6.25.

The trading that is done "on call," however, is not a circumstanced to the trading that is done in "the pit," as it is known—probably from its bottomless nature. The pit is a device which rests between the call board and the door, and which is fashioned after an octagon long drawn out. This is not exactly geometrical, but conveys the idea with sufficient clearness. There are three steps without the pit and three steps within, and, on the narrow platform formed by the fourth and crowning step, the speculator stands from early morn howling his lungs away at \$6.25 per hawl, until the ringing of the gong drives him from its precincts. Even then he is frequently known to gather without and do a little trading in a quiet way. "Trading on the curb" this is denominated, and it is forbidden by the rules of the Exchange. To an outsider who is not versed in the ways of the speculative trader, it is difficult to understand what is going on within the sacred precincts especially when there is a "bull" or upward movement on foot in Chicago and the crowd grows excited. To the stranger the pit at these times has all the appearance of a branch lunatic asylum—three dozen men howling some unintelligible gibberish at the tops of their voices, while a fringe of outsiders at the top peeps over the heads of those on the steps below and eagerly watches the progress of events.

A telegraph boy comes from within the Western Union railing, runs up the steps and dives head-first between someone's legs. His mouth is working, and he is evidently saying something, though what it is no one four feet away could tell. The boy vanishes, and occasionally his hand bobs up, with the message tight clutched in it, while a shrill, piping voice says: "W. T. Anderson." Some one reaches down and grabs the message, and the boy disappears. He is the only person, aside from the regular denizens, who ever ventures into the pit. His size protects him. Occasionally Sid Francis varies the

monotony by jumping from the top step with a Comanche yell, and descending upon the crowd below. Sid is a hat smasher from the glacial period. He is the original in fact, and the commissions he receives from the hat stores around town are enormous. Occasionally Bill Hill's voice is heard piping the first stanza of "Mr. Riley," the famous gentleman that kept the hostelry, but he never gets further than the first stanza. He is then led without by a self-appointed committee and admonished. Occasionally to still further vary the monotony, a telegraph boy becomes erratic and goes sailing off toward the flour corner, yelling "Tracy & Bell" at the top of his voice—one yell for every jump. There is a skirmish, and Charlie Tracy is seen to gather up his coat-skirts and sprint across the floor in a highly undignified manner, to return with a "bull" telegram of 3,000 words, giving all the details of the coming war in Siberia, with its probable effect on the market. Whenever Chicago falls short of bull arguments she always resurrects the old war rumors, and she generally locates the war in a different spot each time. Chicago has been known to engage the entire civilized world in deadly conflict within the short space of six months. Every time a new war rumor comes in the bulls all howl and the markets climb up a cent and then slips back again, and the yelling goes right on. It never varies; it is the same old yell from 11 to 1 o'clock, and from 2 to 2:30; when the gong rings for the last time and Jimmy Newell pulls the doors together on the coat-tails of the last vanishing spectator. "Jimmy" as he is best known although he figures in the Directory as James P., is probably as prominent as any character around the Exchange. He has become identified with it from long association, and his friends are numbered by his acquaintances, and they include every man on the floor. Jimmy worked for the Western Union Telegraph Company when a little chap, and first came to the Exchange as a messenger long before the faintest indication of down was to be seen on his upper lip. He continued to do clerical and general work until the death of the doorkeeper, at that time one of the oldest employes of the Exchange, when Jimmy took his place. He has occupied the same position ever since, and in all the years of his service, with the con-

stantly changing membership of the Exchange, Jim has never been known to forget a face. There were at the beginning of last year 3,565 members of the Exchange, nearly half of whom came on the floor no more than once or twice during the year. If a man had once presented his ticket at the door, however, he was known for the balance of the year, and, let him not return for eleven months, he was sure to pass in unquestioned. As a phenomenon James is an undoubted success, and when he makes a mistake it will be recorded in big red letters over the entrance to the Exchange.

WHEAT IN THE OLDEN TIME.

Wheat in the olden time, we read, sold for twenty shillings per quarter, equal to £6 now; in the years 1193, 1194, and 1195, for twelve pence a quarter; beans and oats for four pence, in 1216. Wheat sold in some places for twelve pence a quarter, and not many years after for twenty shillings a bushel, as much as four pounds now, 1286; wheat sold for forty shillings a quarter, as much as eight pounds now, 1315; wheat sold for three pounds a bushel, 1316; wheat sold for forty shillings a quarter, as much as twenty shillings a bushel now, 1335; wheat sold in London four shillings a quarter, 1493.

In the reign of	per qr.	£	s.	d.
Philip and Mary it sold for.....		0	6	8
Elizabeth		0	9	0
James I.		0	11	6
Charles II.		0	14	0
James II.		1	4	0
William and Mary		1	11	0
Anne		1	13	0
George I.		2	0	0
George II.		2	15	0

It is announced that in the United States the winter wheat acreage has been decreased very considerably—in some localities as much as 40 and 50 per cent. The aggregate decrease is estimated at 20 per cent.

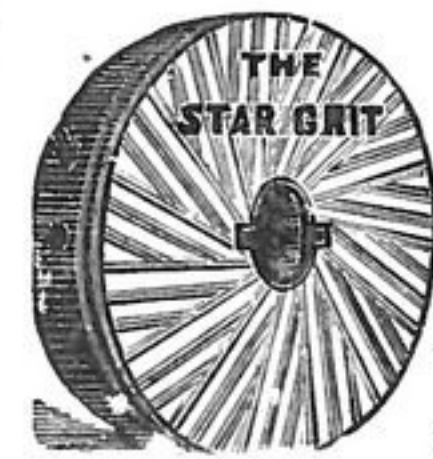
Wonders of the West.

It is a funny ride, indeed, to come from the naked Indians around tropical Yuma and run up into snow-drifts in Roton Pass. When we came over, while we were having a Sunday service in the car, we looked up and saw three men hanging to a telegraph pole in Roton. Three hours afterwards our train ran into a snow-drift and the great engine seemed to butt in vain against a six-foot bank.

"For once, the iron horse appears to be beaten," remarked Gen. Hancock, who had abandoned the Union Pacific Roads, which had been blocked up for two weeks.

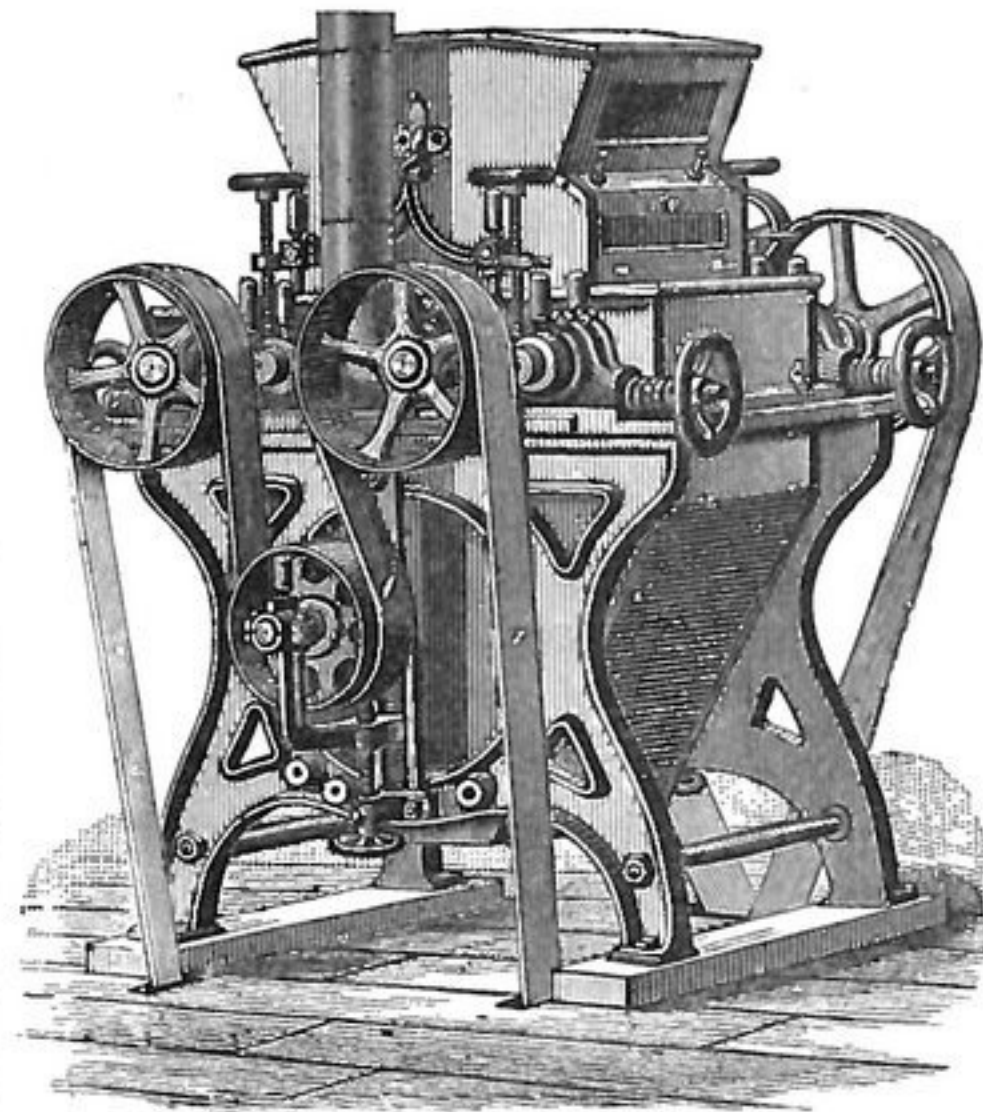
"It isn't an iron horse, and you shouldn't call it an iron horse, General," remarked a lady passenger from Boston.

"Why not?" asked the General in surprise. "Because its block tin," softly murmured the sweet Boston girl, as she gazed out of the window and across the wintry waste, with a far-away look in her hazel eye. But the General was right in the end, for five minutes afterwards the great engine pulled us through and we went into Kansas City, as usual, on time to a half-second, and the Mayor of the city came down to set his watch by the train.



WATER WHEELS AND MILLSTONES.
Best and Cheapest in the world. Manufactured by A. A. DeLoach & Bro., Atlanta, Ga.
Every farmer can now afford a Grist Mill.
Sixty four page Catalogue free.

Rickerson Patent Improved Roller Mill



ORIGINAL 6-INCH ROLLER MILL.

Requires Less Power to Drive,
Has Greater Capacity,
Better Granulation,
More Middlings

THAN ANY OTHER ROLLER MILL.

Patent Exhaust Attachment for
taking away Generated Heat.

Positive movement of the rolls. We will furnish details upon application. Send for our Circulars before purchasing any Roller Mill.

O. E. BROWN MFG. CO.,

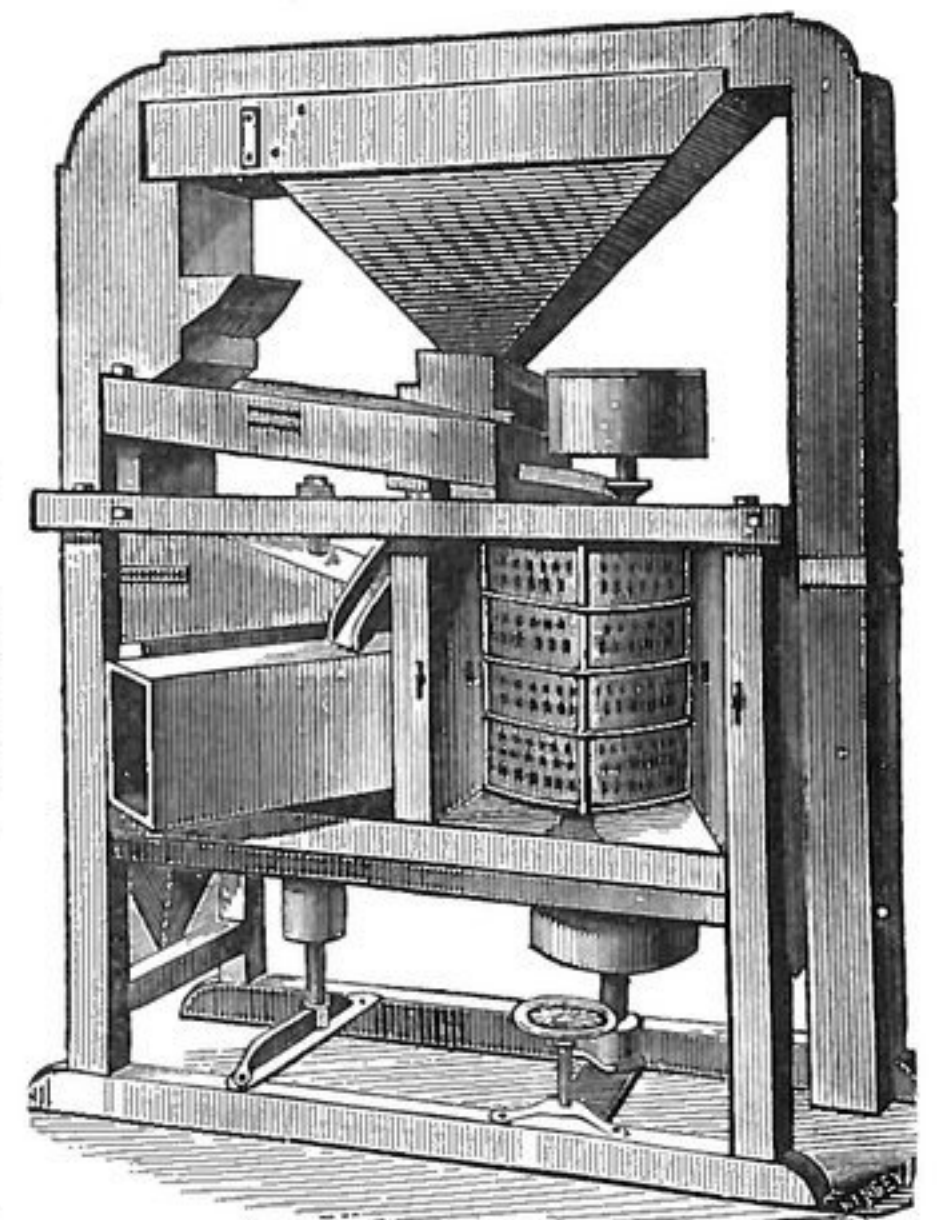
GRAND RAPIDS, MICHIGAN.

TRIMMER'S Improved Adjustable GRAIN RUBBING, POLISHING —AND— SEPARATING MACHINE COMBINED.

It will clean, rub and separate wheat, and take out the rat balls, black steck seeds, joints of straws, cockle and other impurities. It will also rub off more fuzzy ends and dust from the creases of the berries, by rubbing the wheat together as it passes up between the rubbers, so each berry must get rubbed, scoured, and polished alike. It will do all of this work better and last longer than any other machine of the kind. All this we guarantee. It will also clean barley and rye.

SEND FOR DESCRIPTION & PRICE LIST.
THOMPSON & CAMPBELL,

Successors to Kreider, Campbell & Co.,
MILLWRIGHTS & MACHINISTS,
1030 Germantown Avenue, Philadelphia, Penn.



Milwaukee, Wis., Nov. 29, 1884.

**The Geo. T. Smith Middlings Purifier Co.,
Jackson, Michigan.**

Gentlemen: Enclosed please find draft for two Smith Reels. We have now run the Reels 60 days, and are well pleased with same, and must say that we are surprised by the amount of work they do. We are bolting at the rate of 10 barrels per hour, which nearly all passes through upper Reel, and leaves but very little for the lower Reel to do.

Yours truly,

C. MANEGOLD & SON.



SEDIMENT IN BOILERS.

Amount of Sediment collecting in a Steam Boiler when evaporating 1,000 gallons of water per day, and 6,000 gallons per week of 58,318 grains each.

When a gallon of feed-water evaporated to dryness at 212 d. F. leaves of solid matter in grains:	The amount of solid matter collecting in boiler per day will be	The amount of solid matter collecting in boiler per week will be
Grains.	Pounds.	Ozs.
1	2.285
2	4.571
3	6.857
4	9.143
5	11.428
6	13.714
7	16.000
8	18.286
9	20.571
10	22.857
15	34.286
20	45.714
25	57.143
30	68.571
35	80.000
40	91.428
45	102.857
50	114.286
55	125.714
60	137.143
65	148.571
70	160.000
75	171.428
80	182.857
85	194.286
90	205.714
95	217.143
100	228.571
110	257.143
120	285.714
130	314.286
140	342.857
150	371.428
160	400.000
170	428.571
180	457.143
190	485.714
200	514.286
210	542.857

The foregoing table was prepared by F. E. Engelhardt, Ph. D. of the American Dairy Salt Company, Syracuse, N. Y. It will be found interesting and valuable to those having to do with the use of steam boilers, says the Locomotive. This table represents the total amount of solid matter or sediment deposited under the conditions of the boiler making steam without any water being drawn or blown off, or any cleaning whatever, and shows the necessity for such cleaning even in the case of a good feed water. In practice, before the solid matter would all be deposited, it would be impossible to run the boiler, as some salts, as chloride of calcium, which might be present, are deliquescent, dissolving in a very small amount of water; while others, as common salt (which is rarely absent), sulphate of soda and sulphate of magnesia, are very soluble, and would not be deposited till the water was very concentrated. These are generally completely prevented from depositing by sufficient blowing off the boiler.

In general, though of course varying greatly with different water, the scale-making material deposited will be found to average about one-half the amount given by the table; and of this, when it is deposited under favorable conditions, or is of an easily-managed character, much can be removed by the blowing off, as the carbonates of lime or magnesia, though themselves very insoluble, are deposited in a granulated or powder-like form. Sulphate of lime, a very common constituent of water, is soluble in about 600 times its weight of water. This limit is soon reached in evaporating water in a boiler, but the solubility is much increased in presence of common salt and other soluble salts that may be in the water, so that much of it may be prevented from depositing. When once in the form of sediment it becomes very difficult to treat. Water that contains more than fifty grains of solid matter to the gallon is rarely used, and an average feed-water in the Eastern

States, away from limestone regions, would not contain more than fifteen grains of solid matter to the gallon, eight or ten of which might be productive of scale.

THE MATTER OF VENTILATION.

Now that the cold weather of winter is upon us, a few suggestions relative to the ventilation of rooms when artificial heat is used, may not be out of place, says the "Country Gentlemen." The subject is of the more importance because many persons do not provide a sufficient amount of fresh air for healthy breathing, while others, in their over-anxiety to avoid this error admit a needless amount, and cold and other diseases follow exposure to cold drafts, to say nothing of the waste of fuel. The question naturally occurs, what rule can we have so as to know that we get enough fresh air and not too much? The general principle is simpler than its application. It is this: The average amount of air breathed by every person is about twenty-four cubic inches at each breath, with about twenty respirations a minute. This would be a cubic foot in three and a half minutes, or 400 cubic feet in twenty-four hours, or the contents of a room 7 feet square and 8 feet high. But this is only a fiftieth part of what every healthy person needs, for breathing vitiates the air rapidly, because the air exhaled has 100 times as much carbonic acid gas as the atmosphere, while twice the amount contained in the atmosphere, or eight parts in 10,000, is as large a proportion as can be breathed without injury to the health. Crowded rooms in winter, schools, etc., are sometimes found to contain three or four times as much, and headaches and other ailments are the consequences of breathing the same air over and over again.

There should, therefore, be enough fresh air for every person daily to amount to 20,000 cubic feet, or enough to fill twenty rooms 10 feet square and 10 feet high. This would be amply supplied by an opening, tube, or orifice, 3 inches square, with a moderate current. In the day time there is usually enough air introduced into rooms through opening doors, cracks in window casings and in other ways. The chief danger is in sleeping rooms, where pains should be taken to have a circulation. When the room is warm, and the air outdoors is quite cold, constant and often sufficient currents are caused. A warm air furnace properly made gives a constant admission of warm fresh air. The greatest need is in crowded rooms. A hundred persons should have a ventilating orifice or orifices equal to two and a half feet square. In very windy weather a free ventilation constantly goes on without trouble. A little figuring or calculation will soon enable any person to know how much air to admit into rooms in varying circumstances.

ECONOMICAL STEAMSHIPS.

Apropos of the statement recently published by the Railroad Gazette, we extract the following from a letter by Norman W. Wheeler to the American Manufacturer: "We need not go to the English or Scotch building yards for specimens of half-ounce per ton-mile ships. We can find them running on our coasts and the Pacific Ocean. We can even find a specimen or two in the back country—upon the great lakes. Take, for instance, the H. J. Jewett which came out in 1882. She carries 2,300 tons of 2,000 pounds each. She runs in deep water fourteen statute miles per hour, which is also exactly twelve nautical miles. Her course between Buffalo and Chicago covers long reaches of shallow water, which has the effect of reducing speed and increasing coal consumption per mile. She makes the round trip between Buffalo and Chicago with an average of 80 tons of Ohio coal—including the coal burned in port, steam being always

kept on one of her two boilers. The shortest possible distance to be run on a round trip is 1,800 statute miles, which is equal to .0445 of a pound per ton per mile, making fuel cost per-ton-mile .71 of an ounce, at twelve knots per hour. Now the required powers for different speeds are as the squares of the speeds so that the consumption at ten miles equals $100 \div 144 \times .71$ ounce, which gives us .497 of an ounce of coal per ton, moved one mile in six minutes, saying nothing of shallow water resistance, and coal burned in port."

* * The investigations of Dr. Frederick Siemens, into the subject of combustion, have led him to the conclusion that combustion can only be perfect, and be maintained perfect, if the space in which it takes place is sufficiently large to allow the gases to combine out of contact with solid materials. Having proved that solid substances interfere with the formation of flame, and that flame injures solid substances with which it comes in contact, he brings forward an hypothesis to account for the phenomena. According to the electrical hypothesis which Dr. Siemens prefers, flame is the result of an infinite number of exceedingly minute electrical flashes, the flashes being due to the exceedingly swift motion of gaseous particles, and a solid body which opposes itself to these flashes is cut by them, whilst, the motion being more or less arrested by the solid body, the flame is damped. Dr. Siemens insists that flame must not be allowed to impinge upon bodies to be heated, but must simply heat the bodies by radiation, and furnaces must be so constructed as to allow the flame to develop out of contact, not only with the substance on its bed, but with the walls and roof of the furnace itself; it thus follows that large furnaces must replace small ones.

* * The following figures are published regarding the prevalence of incendiary fires in the various states of the Union: Seventy-four per cent. of the fires in Tennessee are of incendiary origin, while South Carolina and North Carolina have 70 per cent. each; Mississippi, 68 per cent.; Arkansas, 60 per cent.; West Virginia, 34 per cent.; Indiana, 53 per cent.; Alabama, 52 per cent.; Georgia and Kentucky, 51 per cent. each, and Virginia 50 per cent. In all the other states the number of incendiary fires is below 50 per cent. of the total. Oregon has but 7 per cent.; New Hampshire, 9 per cent.; Maryland, 12 per cent.; Illinois, 15 per cent., and Kansas 19 per cent., while the following states are above 20 per cent., but under the average of 33: California, Pennsylvania, Vermont, Missouri, Maine, New York, Rhode Island, Wisconsin, Massachusetts and New Jersey.

* * Trade with the west coast of Mexico is made available to American manufacturers from February 1 by a contract which has just been signed by the attorney of the Atchison, Topeka and Santa Fe Railroad and the Mexican Minister of the Interior. From the Port of Guaymas, the Gulf terminus of the Sonora Railroad, the company will be allowed to run a steamer under the American flag to all California ports, carrying Mexican and American mails. Trade heretofore has been restricted to vessels sailing at irregular intervals flying the Mexican flag. The company's vessels will run through to San Francisco only every three months, but will make regular connections each trip with the Pacific Mail steamers at Acapulco for San Francisco.

* * Out of 1,120 steam vessels which sailed from New York to Europe during 1884, carrying 42,961,799 bushels of grain, there was not a single one over which floated the stars and stripes. Of the 101 sailing

vessels, carrying 2,431,988 bushels, just precisely two of the bottoms were American. They sailed in February, and they carried 69,854 bushels; of these ships it is said that they can only technically claim to be American. Practically the United States has no part nor lot in the grain-carrying trade from New York, and Great Britain leads the list. She had 661 steamers last year in the grain trade alone, while the aggregate of all other nations was only 459.

* * The sources of petroleum are found in almost every part of the globe, and the use of the article would seem well nigh coeval with civilization. There is a spring in one of the Ionian Islands, which has yielded petroleum more than 2,000 years. The city of Genoa was formerly lighted by oil from the wells of Armenia, on the banks of the Zara. In Persia, and on the Caspian Sea, at Baku, numerous springs of petroleum have been known from the earliest time; and those of Rangoon, on the Irawaddy, are said to have yielded, before the general introduction of petroleum, some 400,000 hogsheads of oil a year.

* * It has been estimated that a public speaker says in one hour, on an average, what, if printed, would occupy fifteen octavo pages. In ordinary conversation words flow from the lips quite as rapidly as in public speech. Supposing, then, that all the talk of one day be estimated as equivalent to four hours' consecutive speaking, a man says in one week what, if printed, would be an octavo volume of 320 pages. In one year he speaks fifty-two such volumes; and in thirty years he would have an extensive library of 1560 volumes. It is a matter of rejoicing that the talk of society is not thus printed and perpetuated.

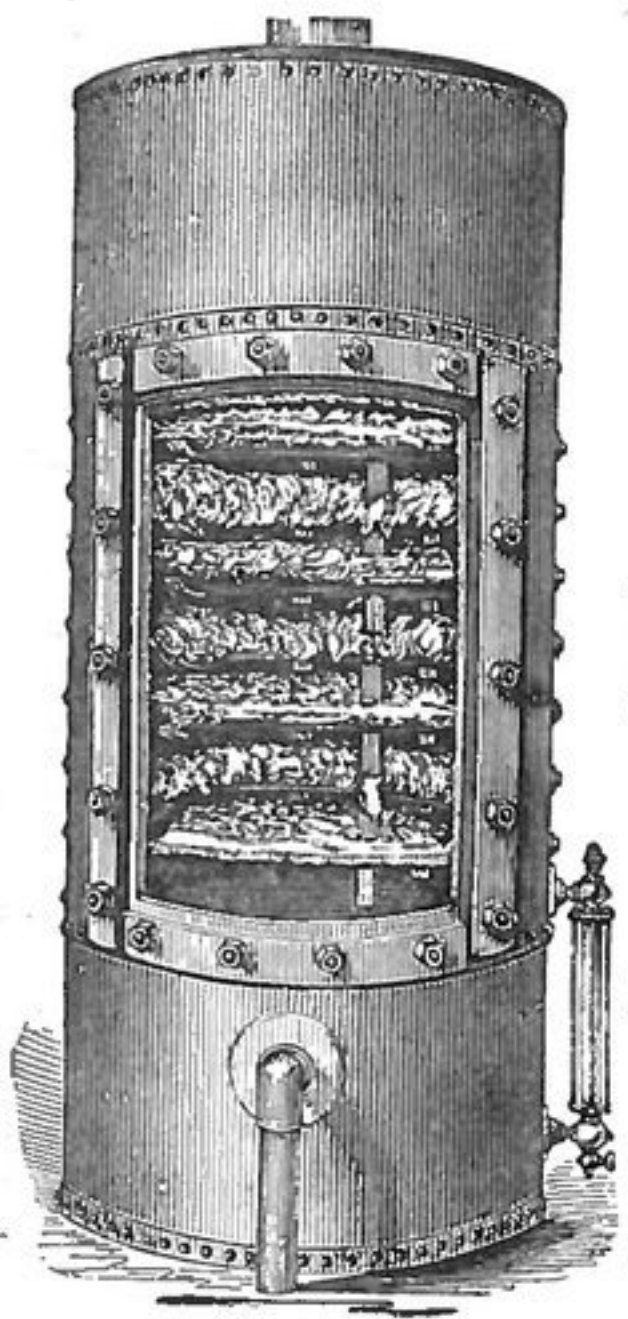
* * There arrived in the custom districts of the United States during the month of December 18,697 persons, of whom 3,030 were citizens of the United States returned from abroad, 2,045 were aliens not intending to reside in the United States, and 13,622 were immigrants, the latter comparing with 23,766 in 1883, and 25,868 in 1882, same month. Comparisons of immigration for recent calendar years are as follows:

1884.....	458,983
1883.....	560,196
1882.....	712,544
1881.....	709,234
1880.....	587,292

* * The development of coal veins along the Canadian Pacific railway in Manitoba, will prove incalculably beneficial to the residents of that out-of-the-way section, who have been compelled to fight the frosts of winter when the spirit thermometer would indicate forty and fifty degrees below zero. Bituminous coal sold in Manitoba several winters ago at twelve and fifteen dollars a ton. The new veins will make coal an every day fuel no less than a luxury.

* * The Bank of France, it is said, has an invisible studio in a gallery behind the cashiers, so that at a signal from one of them any suspected customer will instantly have his picture taken without his own knowledge. The camera has also become very useful in the detection of frauds, a word or figure that to the eye seemed completely erased being clearly reproduced in photographs of the document that had been tampered with.

* * Far out at sea, along both the Gulf and Atlantic coasts of Florida, says the Savannah (Ga.) News, are several springs of fresh water. They are well known to the spongers and fishermen, who frequently visit them to replenish their water casks. On this same coast is an oil spring, which diffuses a calm over troubled waters, and affords a safe refuge to vessels during a gale.



STILWELL'S PATENT LIME EXTRACTING HEATER and FILTER COMB'D

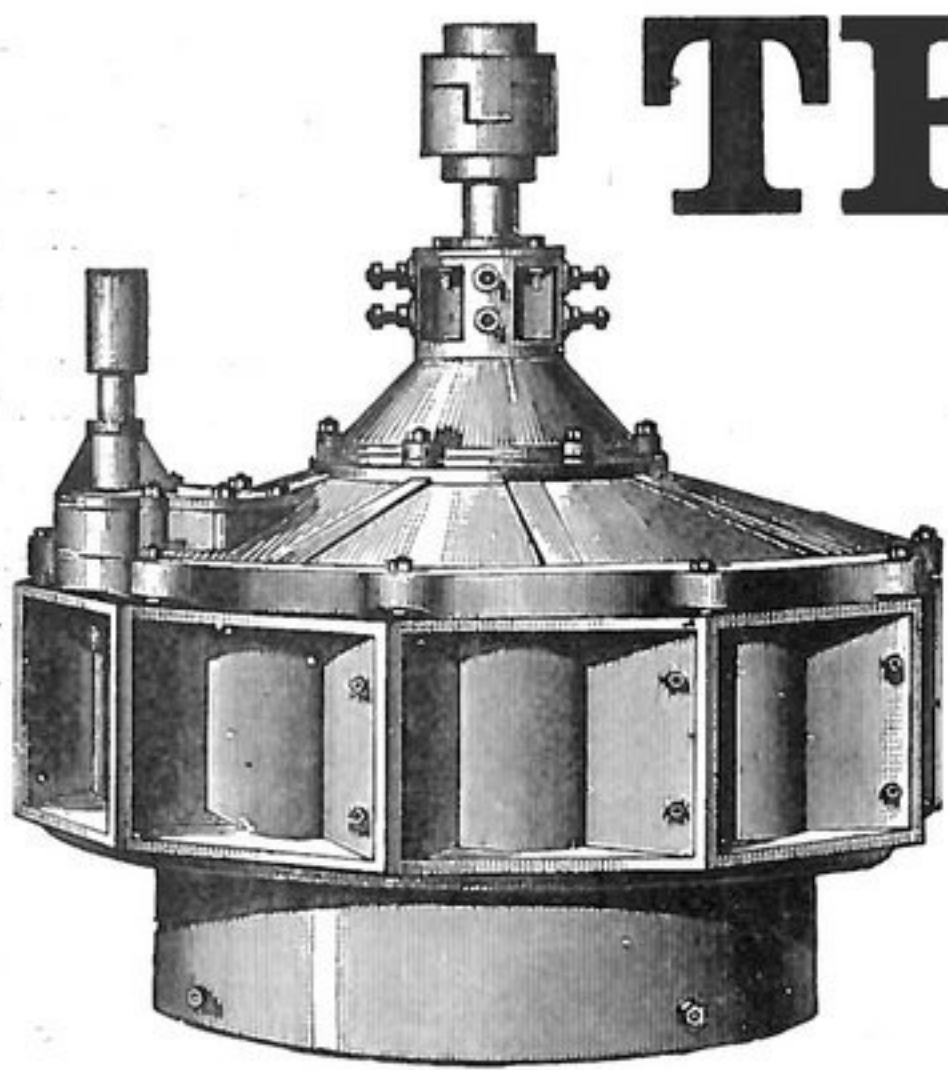
IS THE ONLY LIME EXTRACTING HEATER THAT WILL

Prevent Scale in Steam Boilers, Removing all Impurities from the Water Before it enters the Boiler.

THOROUGHLY TESTED. OVER 3,000 OF THEM IN DAILY USE.

This cut is a fac simile of the appearance of a No. 5 Heater at work on ordinary lime water, when the door was removed after the heater had been Running two weeks. Illustrated Catalogue Free.

STILWELL & BIERCE MANUF'G. CO., DAYTON, OHIO.



THE EUREKA TURBINE

CELEBRATED AS THE BEST PART-GATE WHEEL EVER BUILT. ABSOLUTELY UNEQUALLED IN EFFICIENCY, AS SHOWN BY THE ACCOMPANYING TABLE.

From the Records of Actual Tests at the
Holyoke, Mass., Testing Flume:

PERCENTAGE OF EFFICIENCY.

	Full Gate.	$\frac{3}{4}$ Water.	$\frac{1}{2}$ Water.	$\frac{1}{4}$ Water.
24 Inch Wheel.....	.8436	.8416	.8202	.8002
24 Inch Wheel.....	.8206	.7910	.7700	.7008
24 Inch Wheel.....	.8078	.7578	.7275	.6796
30 Inch Wheel.....	.8000	.8011	.7814	.6850

WE PUBLISH OUR PART-GATE FIGURES. OTHERS SIGNIFICANTLY OMIT THEM.

No Other Turbine Ever Approached the Above Percentages at Part-Gate.
For Catalogue and Information Address,

W. H. BARBER & CO., ENGINEERS
AND
MACHINISTS

ALLENTOWN, PA., U. S. A.

**RIVAL
STEAM PUMPS**
THE
CHEAPEST
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FOR
HOT & COLD
WATER.
\$35.00
UPWARDS.
SEND FOR
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Improved Success

Percentage.

Full Gate.....	86.29
$\frac{3}{4}$ Gate.....	86.07
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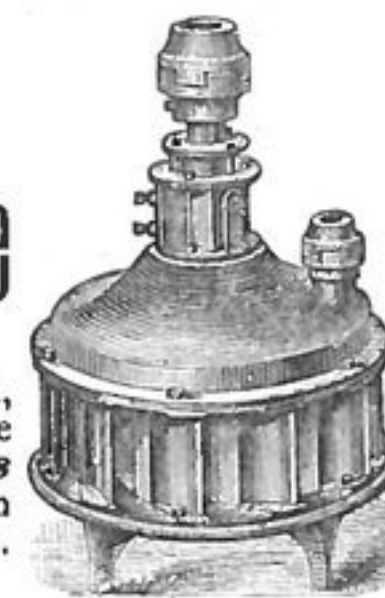
This Wheel is Durable and Cheap.

Send for Pamphlet to
**S. MORGAN SMITH,
YORK, PA.**



BURNHAM'S IMPROVED Standard Turbine

IS THE
Best constructed and finished,
gives better Percentage, more
Power, and is sold for less
money, per horse power, than
any other Turbine in the world.
New Pamphlet sent free by

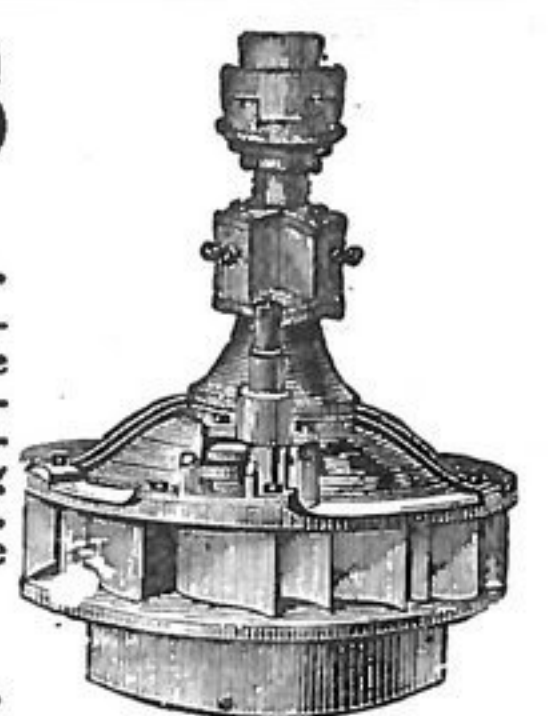


Burnham Bros., York, Pa.

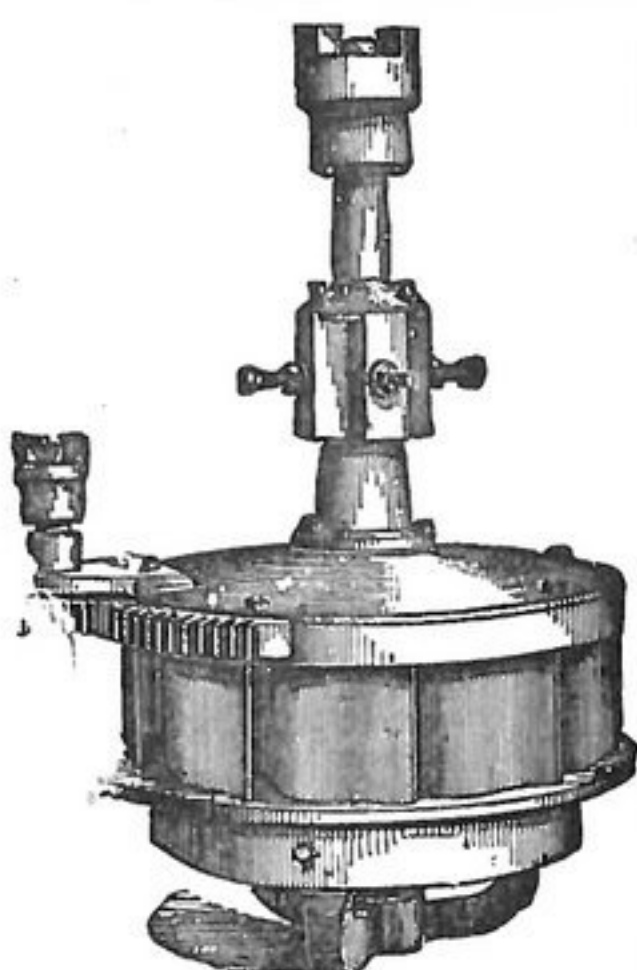
MERCER'S

RELIABLE
Turbine Water Wheel.

This wheel is acknow-
ledged one of the best on the
market. Has valuable im-
provements in the construc-
tion which is commanding
the attention of buyers.
Send for catalogue and price
list. **T. B. MERCER,**
WEST CHESTER,
PA.



LESNER'S IMPROVED TURBINE.



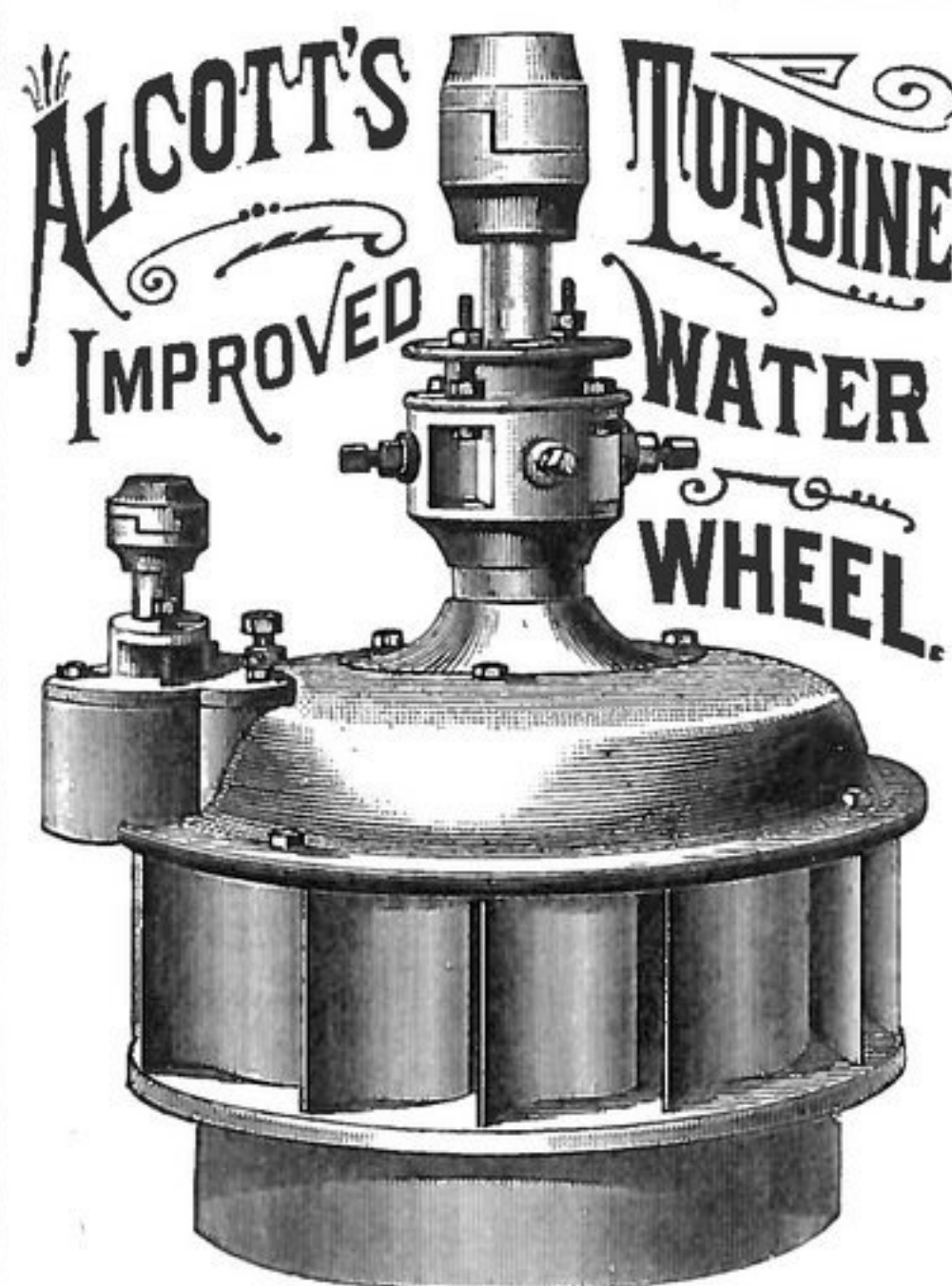
Simple,
Durable,
Strong
Gate Works
EASILY
—AND—
RAPIDLY.
PERFECT
Satisfaction
—IS—
GUARANTEED.

W. B. WEMPLE'S SONS, FULTONVILLE, N. Y.

THE BOSS ELEVATOR CUP



is gaining favor every
day. Over 13,000 sold
in one day in three dif-
ferent States. My ca-
pacity in my new shops
is 6,000 per week. I
carry 30,000 cups in
stock and can take cars
of any size order.
W. P. MYER,
19 and 21 E. South St.
INDIANAPOLIS, IND.



*This Wheel gives high results, and
is acknowledged the best, most prac-
tical and efficient Turbine made.
For Simplicity, Durability, and
Tightness of Gate it has no equal.*

State requirements and send for Catalogue to
**T. C. ALCOTT & SON,
MOUNT HOLLY, N. J.**

POOLE & HUNT'S LEFFEL TURBINE WATER WHEELS

Made of Best Materials, and in the Best Style of Workmanship.

MACHINE-MOLDED MILL GEARING

From 1 to 20 feet diameter, of any desired face or pitch, moulded by
our own Special Machinery.

SHAFTING, PULLEYS AND HANGERS

Of the Latest and Most Improved Designs.

Engines, Boilers,
Mixers and General Outfit for Fertilizer Works.

Special Attention given to Heavy Gearing. Shipping Facilities the
Best in All Directions.

POOLE & HUNT, BALTIMORE, MD.

LEFFEL'S WATER WHEEL

MADE BY JAMES LEFFEL & CO.

The "OLD RELIABLE"

with improvements, making it the

**MOST PERFECT TURBINE
NOW IN USE.**

Comprising the Largest and the Smallest Wheels, under both the Highest and
Lowest Heads used in this Country. Our new Illustrated Book sent free to
those owning water power.

Those improving water power should not fail to write us for New Prices
before buying elsewhere. New Shops and New Machinery are provided for
making this wheel. Address

JAMES LEFFEL & CO., SPRINGFIELD, OHIO, AND
110 LIBERTY STREET, N. Y. CITY.



Notes from the Trade.

T. F. Wood, Bristol, Tenn., is about to go into the flour milling business.

The large elevator at Big Stone City burned Jan. 20, with 4,000 bushels of wheat.

Ames Bros. & Smith's roller mills at Red Lake Falls, Minn., burned Jan. 20. Loss, \$12,000.

The Winona, Minn., flouring mills have advanced the price of flour 25 cents per hundred barrels.

A drying elevator is to be built at Duluth, 30x90 feet, with a working capacity for 500,000 bushels.

A flour, paper and pulp manufacturing company, with a capital stock of \$40,000, has been organized at Austin, Minn.

Chris. Milner and Sam Galloway, Cartersville, Ga., have rented a building and will put in flour and grist machinery.

At Upper Jay, Essex county, N. Y., Jan. 22, J. T. Heard & Co.'s grist mill was burned. Loss, \$5,000; insurance, \$3,500.

Kleekamp & Hussman, flour merchants of St. Louis also owners of a flour mill at Mascoutah, Ill., made an assignment last week.

Kibble & Robinson, Hartford, Conn., members of the New York Produce Exchange, and in the grain trade, were forced to suspend.

George H. Walcott, dealer in grain at Boston, Mass., is endeavoring to compromise with his creditors at fifty cents on the dollar.

At Ottumwa, Iowa, Jan. 21, the Wapello mills, J. M. Lamme, proprietor, were burned. The loss is estimated at \$9,400; insurance, \$4,000.

A railroad syndicate has purchased 500 feet bay frontage, at Connor's Point, Duluth, on which to erect a coal dock, elevator, and other buildings. Price, \$10,000.

The recent rise in the price of wheat brought out such quantities that the mills and elevators at Cannon Falls, Minn., could hardly accommodate the supply.

W. S. Jennings is adding rolls and other improved machinery to his mill at Saybrook, Ill., all of which he gets of Nordyke & Marmon Co., of Indianapolis, Ind.

There is said to be a good opening for a flouring mill at Newton, N. C., and that parties with capital (and experience in the business) could undoubtedly do well there.

The Pembina roller mill at Hokah, Minn., has been purchased by Mr. Williams, who is engaged in milling at Lanesboro and Houston. The mill is to be overhauled and thoroughly repaired.

At Pipersville, Wis., Jan. 21, the flouring mill of Piper, Gibb & Co. was burned. Loss, \$15,000; insured in the Continental of New York for \$2,000; in the Ixonia Town Mutual for \$1,500, and in the Millers' Mutual for \$3,000.

Walker, Fiske & Co., of Milwaukee, very tersely describe the change in the situation by saying that the recent advance in wheat has added \$7,000,000 to the value of property in sight, and probably \$50,000,000 more in the graneries of the farmer.

J. F. Williams & Son, formerly of Roscoe, O., have purchased an old-style mill at Coshocton, Ohio, and the contract for remodeling it to the roller system has been awarded Nordyke & Marmon Co., of Indianapolis, Ind., for a capacity of 75 barrels daily.

The only remaining old-style flouring mill at Marion, Ill., is being changed to the full roller system, using six breaks on wheat. Nordyke & Marmon Co., of Indianapolis, Ind., are furnishing all the machinery, the capacity of which will be 125 barrels daily.

J. L. Whipple of Wyandotte, Michigan, is engaged in the task of remodeling his mill to the roller system, and has placed his order for ten pairs of rolls, scalpers, purifiers, centrifugal reels, and a variety of other machinery, with Nordyke & Marmon Company, of Indianapolis, Ind.

Samuel McCray, of Cuba, Ohio, is one of the latest to succumb to the demands of his customers for roller flour, and, after a due inspection of mills using different systems of rolls, have contracted with Nordyke & Marmon Company, of Indianapolis, Ind., for all his new machineries.

J. W. Bowser, of Whitestown, Ind., who was the recent owner of a fine roller mill, which, however, suffered total destruction by fire in December, has contracted with Nordyke & Marmon

Company, of Indianapolis, Ind., for a new 75-barrel all roller mill, to replace the one recently lost.

The Lake Superior Milling Company, of Superior, Wis., is a recent organization for the purpose of erecting a 150-barrel roller mill, in which it is the intention to adopt the Nordyke & Marmon roller system, and the contract for the manufacture of the machinery has been awarded to that company.

Kreisher Bros., who lost their mill at Colfax, Indiana, by fire last fall, have associated with them P. B. Syders, of Connersville, Ind., and the new firm will erect a 125-barrel roller mill at Ross ville, Ind., and are having their machinery manufactured at the Nordyke & Marmon Company's establishment at Indianapolis, Indiana.

The exports of wheat and flour from the United States during the calendar year 1884 compared with 1883 as follows:

	1884.	1883.
Wheat, bushels.....	79,434,182	69,476,786
Flour, barrels.....	8,995,536	8,997,194
Wheat and flour, bush..	119,914,094	109,964,059

The Joseph Peeler Milling Company, of St. Jacobs, Ill., made an assignment Jan. 21. Their assets consisting of unincumbered mill property and mill stock, amount to \$10,000; their liabilities are estimated at \$6,000. Creditors will realize the full amount of their claims. The general depression in business is given as the cause of the suspension.

Gov. Crittenden, of Missouri, has been officially informed that Alfred Sheldon, a member of the Blue Springs Milling Company, who mysteriously disappeared last May, and who was alleged to be short \$20,000 in his accounts, is in England. Sensational accounts that he was kidnapped and held for ransom, were current at the time of his disappearance.

Arizona has held her first Territorial Fair, the chief feature being the display made by the Indians. Their exhibit comprised every form of vegetable and cereal product entering into their domestic economy. The Indian wheat took the first and second premiums. One curious article exhibited was an Indian wooden plow, an exact counterpart of those used 2,000 years ago in the valley of the Nile.

At Keokuk, Ia., Jan. 24, two suits were filed in the United States Circuit Court by the First National Bank of Indianapolis against the Burlington and Mississippi Elevator Company of Burlington. One was for \$80,000, due on a note, and the other to compel the transfer of 900 shares of stock, valued at \$90,000. The stock belonged to B. D. Brown, President of the Elevator Company, and the bank made advances, holding the shares as collateral.

A grain receiver in Chicago says the charging of the extra commission for selling grain by sample on track is justified by the extra trouble involved, as the latter includes a great deal of hunting up on track as well as the mere labor and risk of selling on 'Change. He alleges, too, that the charge is not a discrimination against the grain, as receivers always place the grain in store when it will not bring at least one cent more as sold by sample.

Some of the farmers in the British Northwest purpose to put their wheat in the ground late in the autumn, when the weather is so cold that the grain cannot germinate until the following spring. It is contended that grain sown in this way will ripen before there is any danger of frost. The experiment has, it is said, been already tried with success in the Northwest. The same thing has been tried with spring wheat in Ontario, and was found not to succeed.

One of the finest roller mills in Pennsylvania is being built at Waynesburg, Penn. The building is of brick and stone with a mansard roof of slate. The motive power is an automatic engine, with natural gas as fuel under boilers. The capacity will be 80 barrels per day, and all grinding will be done on fourteen pairs of rolls. The contract for the machinery has been awarded to Nordyke & Marmon Company, of Indianapolis, Ind., and it is expected that the mill will be running by May 1, 1885.

At Bond Head, Can., Jan. 20, the large grist and saw mills, and dwelling house and barn of Joseph Tuer were totally consumed by fire. The property was valued at over \$6,000, and will be much missed in that section. Insurance as follows: On grist and saw mill, \$2,700 in the Commercial Union; on dwelling house, \$600, and on the barn, \$200. There was burned also the property of Charles Walwin, occupied by James Wilson; no insurance. The fire is supposed to have originated in the engine room.

It is reported on good authority that the condition of winter wheat is quite unfavorable in Michigan, Illinois, Kansas, Missouri and Kentucky,

where the weather has been very severe and little or no snow to protect it. The damage is variously estimated at from 10 to 25 per cent. In most of the wheat-growing states, moreover, the acreage has been decreased from 10 to 33 per cent, and there will be a large falling off in the acreage of spring wheat, unless the price is materially advanced, which is not probable. The poor prospect for winter wheat and the reduced acreage will tend towards an improvement in the price of the article.

The Iowa State Agricultural Association held its annual session at Des Moines on the 14th inst. The crop report submitted by the secretary shows the total yield, average yield per acre and prices as follows: Corn, 269,000,000 bushels; average per acre, 36 bushels. Wheat, 35,000,000 bushels; average price, 55 cents; average yield, 12 bushels. Rye, 1,079,720 bushels; average price, 38 cents. Buckwheat, 138,000; average price, 78 cents. Barley, average, 24 bushels, average price, 38 cents. Flax, 300,000 bushels; average price, \$1.40. Potatoes, average, 98 bushels. Grasses, average yield, 1½ tons per acre. Cattle, horses and hogs have suffered severely from various diseases, especially swine.

The dyspeptic philosophers, and in fact all that part of our population with impaired digestive apparatus, will be interested in the announcement made that a pool or combination of oatmeal proprietors has been formed for the purpose of advancing the price of oatmeal. The pool, or whatever it may be, is said to include all the oatmeal manufacturers in the United States except four on the Pacific coast. Inferentially, therefrom, it includes the mills at Chicago, Iowa City, Des Moines, Davenport, Muscatine, Cedar Rapids, Cedar Falls, Rockford, Leavenworth, Peoria, Akron, Cleveland and one or two other establishments besides, all of which have a capacity of about 5,000 barrels per day. We are not disposed to prejudge this pool, we believe that it will be a failure. Pools have generally proved to be poor expedients in this country for the reason that it is hard to perpetuate outrages even upon invalids and dyspeptics.

The people of Ahnapee, Wis., have come to the conclusion that a merchant flouring mill will be a valuable addition to the business and industries of that thriving town. Ahnapee is situated in the northeast corner of the state, between Lake Michigan and Green Bay, and is the business center of a rich farming and lumbering section. The *Record*, of that town, says: "We are reliably informed that a firm who have a first-class roller mill of 100 barrels capacity are willing and anxious to remove from their present location to this city, provided we pay the expense incurred in effecting the removal, and donate them a desirable site for their mill in this city." It then urges the citizens to take hold and make the necessary provisions, on the ground that such a mill located in their midst, will be worth several times the cost, to the business and prosperity of the city. The *Record* is right, and the citizens of the place, if they have any public spirit, will lose no time in securing the mill.

The brief but successful business career of Myers Bros., of Westminster, Maryland, furnishes food for thought, and an example for other young millers to pattern after. Starting in business in 1878 with limited capital they placed their first order for mill machinery with a reliable and practical mill furnishing firm, namely, Nordyke & Marmon Company, of Indianapolis, Indiana. After the advantages of rolls upon bran and tailings became apparent they were added in due course of time. The next step was the addition of rolls for reducing the wheat, still using the old millstones for grinding clean middlings, and now they have again contracted with Nordyke & Marmon Company for additional rolls and machinery to make the mill an all roller one, with an increase in capacity to meet the demand for their flour. This latter contract puts them to an expense of fully \$8,000, and in all instances they have depended solely on the advice and representations of their mill furnishers, and from being young men of limited capital have become wealthy and prominent business men, whose mill stands among the best in the East.

The failure of P. F. Reade, speculator in grain options, which occurred last week, says the New York "Produce Exchange Reporter," although in itself comparatively insignificant, the total liabilities not exceeding \$3,000, affords food for thought. Reade, who was a mere youth, being scarcely more than 20 years old, was until about a year ago in the employ of H. B. Herbert & Co., who parted with him when they found he was secretly speculating. Subsequently he began "scalping" in a heavy and bold manner for one so young, and having got short of wheat last year, found it an easy matter to make money. It is said that he made at least \$20,000 in the rapid and steady decline, and some say over \$30,000. Of course he became greatly elated over his success and doubt-

less got to think that he was cut out for another Gould, and that he was bound to get rich no matter what happened. Therefore, conservation and well-posted operators were not surprised to hear of his downfall. Several months ago he got on the wrong side of the market and lost, we are told, a considerable portion of his former profits, but nevertheless continued to trade recklessly, and was long of some 200,000 bushels of May wheat. A pretty big load for a "boy speculator," as he has lately been called. The moral of all this is: Don't lose your head and imagine your infallibility because you happen to be lucky enough to get on the right side and make a little money. It's reasonable to expect a millionaire in a year or two.

The Virtuous Conductor.

The St. Louis Globe-Democrat tells this: Superintendent Spoor, of the Wagner sleeping car, is another victim to the zeal of the virtuous railroad conductor. On New Year's eve, in all the goodness of his heart, and in accordance with the usual custom, he issued orders that all sleeping-car passes for 1884 should be extended to January 10, or until a new series could be issued. Then he jumped aboard the Wabash and went to Kansas City. New Year's Day he spent in looking after some business, and that night again boarded the Wabash, this time on his return. The porter stood on his head in due form, the conductor flourished his cap and made a low salaam, and Superintendent Spoor, beaming upon one and all in the happy consciousness of his own importance, made himself as comfortable as possible by putting on his skull cap and slippers, and otherwise preparing for the nightly ride.

The train rolled on; Mr. Spoor finished his paper and prepared to retire. As the obsequious porter tore down the car to do his bidding the conductor hove in sight and slowly made his way down the aisle. One ticket after another was punched and returned. One passenger tendered a cash fare. Mr. Spoor smiled. What a delicious sensation to ride whither you will without paying a cent. To traverse continents, yea oceans, without spending a nickel. Mr. Spoor reached into his pocket and brought forth his wallet and carefully abstracting a piece of pasteboard held it out to the conductor. The methodical man with the lantern and punch took the card, turned it over, glanced at it, and returned it with the remark, "No good—1884. This is 1885. Full fare please." "What's that? Fare? Oh, no. I am Mr. Spoor, Superintendent of the Wagner. I have charge of these cars."

"I can't help that," was the reply; "I have my orders from Mr. Talmage. Fare or ticket, please." "But you don't seem to understand. I am Spoor—Superintendent Spoor. I have charge of all the Wagner cars on this cussed road. I never pay fare."

"Well you will have to pay this time. My orders are to take up all expired passes."

"But d— it, I won't."

"Then I shall have to request you to get off at the next station."

The porter's hair slowly unkinked and stood on end with horror. Superintendent Spoor grew red in the face. He tried to talk. He could not. His face grew redder and his eyes began to bulge out. Suddenly his voice broke out of its hiding place in a high falsetto key and fairly shouted, "Put me off! I'd like to see you put me off. Here! look here! This is my card," showing a pasteboard at the conductor. "Now, let's see you put me off."

"I have not the slightest doubt that you are Mr. Spoor," said the conductor coolly, "but my orders are plain. If you do not produce a pass or the amount of your fare I shall put you off. If you resist I shall call in my brakemen to assist me."

It was fortunate that there were some ladies in the car. Mr. Spoor held his breath and nearly choked, but his hand went down into his wallet and brought out with it this time a big \$10 note. The conductor methodically handed out the change and proceeded down the aisle. His victim never spoke, but retired behind the curtain of his berth, from which there came an occasional rumble of escaping emotion. When the train pulled into Union Depot Friday morning, he hurried up to his office, where he found two of his car conductors on the Chicago Division in waiting.

"I issued an order," he said before they could open their mouths, "extending all annuals for ten days. Now I revoke it. I take it all back and if any — Wabash man shows himself on your car you get \$2.00 from him or you run him into the smoker."

Later in the day, however, when a Wabash official sent his pass over for a renewal Mr. Spoor thought better of his determination, indorsed it, and, later in the day, grew so agreeable that he concluded the conductor did his duty, and went out to set 'em up with a Wabash man. Thus the story leaked out.



CONCLUSIVE PROOF OF THE SUPERIORITY OF THE GRAY NOISELESS ROLLER MILL.

Is furnished by the fact that these celebrated machines will be used by Messrs. C. A. Pillsbury & Co. in their new **PILLSBURY "B" MILL**. All bidders for the work of constructing this immense mill being required to figure on using the **Gray Roller Mills**. The selection of these machines for the new "B" mill was the result of several years practical test in the other mills owned by the same firm in competition with various other roller mills, the decision being unanimous that, in all particulars, for practical work in the mill, **Gray's Noiseless Roller Mills** were superior to all others. We wish to assure our customers who may not wish to build 2,000 barrel mills, but who wish to build mills of smaller capacity, that no matter what size mill they desire to build or how small its capacity, the **Gray Roller Mills** are the best they can use, and we shall at all times furnish machines equal in every respect of material and workmanship to those which will be used in the new **PILLSBURY MILL**.

EDW. P. ALLIS & CO., RELIANCE WORKS, MILWAUKEE, WIS.

Sole manufacturers of Gray's Patent Noiseless Roller Mills, adapted to mills of any desired capacity.

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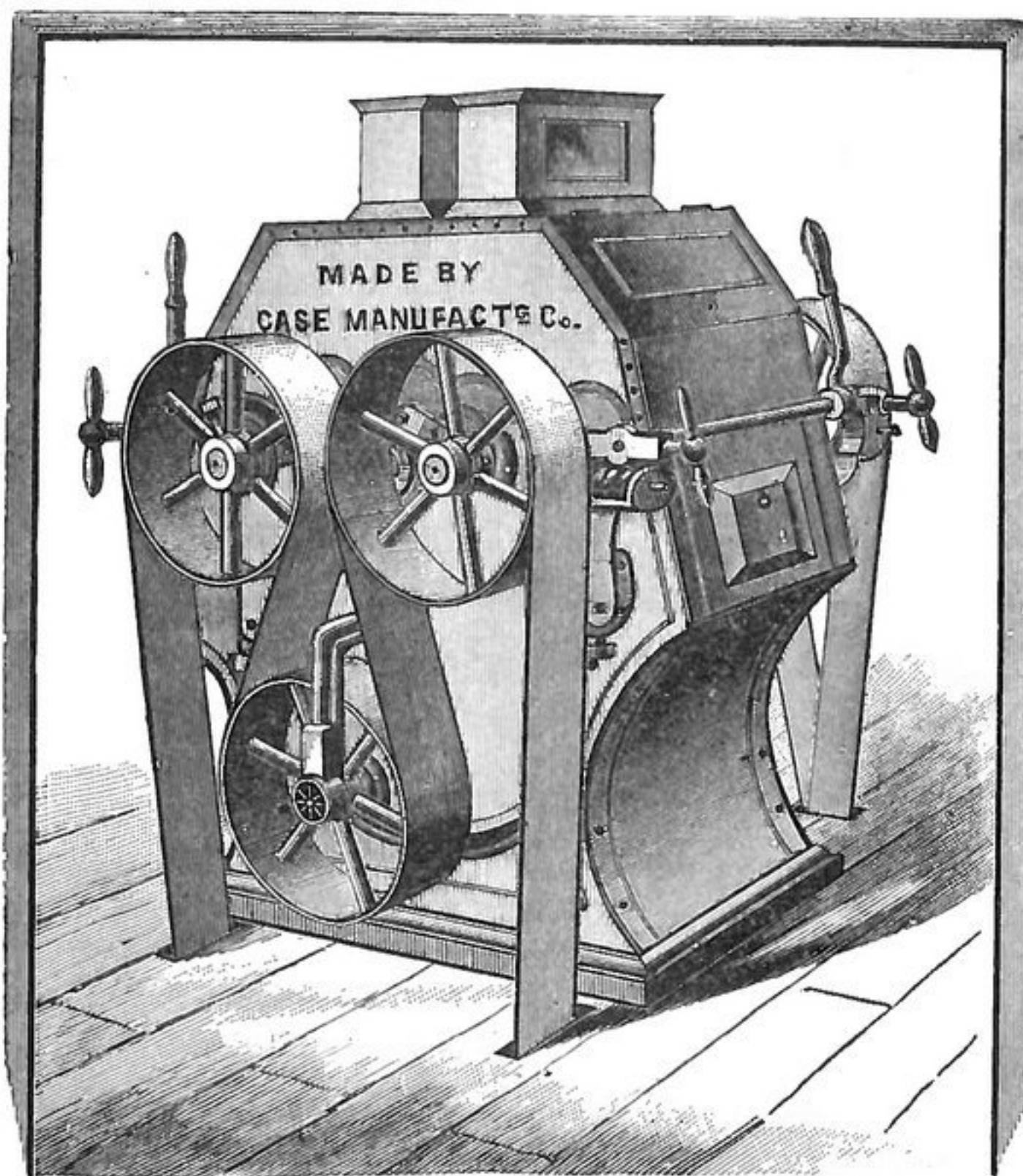
All Warranted made of Best Quality Cast Steel 50 cents per pound.
All Sizes in Stock.

SOLID COTTON BELTING AND ELEVATOR BUCKETS.

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SAMUEL CAREY, No. 17 BROADWAY, NEW YORK.

CAREY'S DOUBLE ANCHOR BOLTING CLOTH.



9x18 4-ROLL MILL. "BISMARCK."

— C. A. S. E. —

CASE MFG. CO., COLUMBUS, OHIO.

XENIA, OHIO, Dec. 15, 1884.

Gentlemen: Feed box received; put it on in a few minutes; started up in a very short time. I was surprised to find my tail over as poor. I examined middlings and found them at least 25 per cent. clearer. Examined flour, was whiter and clear of specks. You know I feel happy, and all because of that little feed box. To sum it up:

- 1st. Simplicity and Durability.
- 2d. Takes care of itself.
- 3d. Feeds alike all the time.
- 4th. Will increase capacity of any Purifier one-fourth.
- 5th. Will make clearer middlings by Twenty-Five per cent.
- 6th. No miller can afford to do without one on any machine in mill.
- 7th. Perfection is the name.

Wishing you a Happy and Merry Christmas, I am, Respectfully yours,

W. H. HARBISON.

We invite all who Contemplate Making any Changes in their Mill to Write to us or Come and See us Before Placing Their Orders.

THE CASE MFG. CO., COLUMBUS, OHIO.



THE WHEAT ACREAGE IN ENGLAND.

THE "Mark Lane Express" contains a number of reports from the principal wheat-growing counties of England on the area of the wheat crop as compared with last year's acreage. As Scotland grew only 68,716 acres in 1884 and Ireland only 96,008 acres, the lack of returns from those counties is of no importance. With respect to Wales, again, from which there are only two returns, the acreage was only 77,611 acres in 1884.

The principal wheat-growing county in England is Lincolnshire, which grew 236,265 acres in 1884. There are five reports from that county, one of which states that the acreage is only half that of last year, a second says one-fourth less, while three state that the area is either fully equal or larger. These diverse reports are from different districts. Yorkshire is the county ranking next in wheat acreage, having produced 195,709 acres in 1884, and there the acreage appears to have been reduced in some districts and not in others. In Norfolk, which grew 181,927 acres of wheat last year, the acreage is variously said to be from 7 to 45 per cent. less than usual. From two districts of Essex, where there were 161,787 acres last year, the statement is that the full acreage of wheat has been sown, while from four districts the decrease is said to vary from 10 to 33 per cent. All reports from Suffolk mention decrease, from 10 to 25 per cent. In most parts of Sussex the full acreage has been sown. Reports from the other counties vary very much as those referred to above. Summing up, the "Mark Lane Express" says:

"Without a return from nearly every farm in the country it would be impossible to state with confidence what the reduction in the area of wheat sown is. Judging from the reports sent to us, and duly considering the extent of the usual wheat area of the respective counties, we should estimate the decrease for England and Wales at between 10 and 15 per cent. If the price of wheat continues to improve, we think it likely that more wheat will be sown, and that it will not be safe to reckon on a reduction of more than 10 per cent. in the total area of the wheat crop for 1885."

This statement was made on January 5, and on that day there was an advance of 2s. to 3s. per quarter on wheat as compared with the previous Monday's prices, which, again, were 6d. to 1s. per quarter above those of the week before. This rise of 2s. 6d. to 4s. in a fortnight will probably have had its effect upon English farmers. The land was in excellent condition for sowing, and there is quite as good a prospect for wheat as for barley or oats in respect to future prices. In England, as a rule, very little wheat is sown after Christmas; but a continued rise in the price would probably lead to extensive sowing if the weather should remain favorable. Under such circumstances it is quite possible that even the 10 per cent. decrease in the wheat acreage of England, on which our contemporary counted before the last jump up in prices had been made known, may disappear.

We have seen a few reports from Scotland and Ireland which show that the decrease in autumn-sown wheat is at least as great proportionately in those parts of the Kingdom as it is in England. The area of the wheat in the United Kingdom last year was 2,750,588 acres. If the acreage next harvest should be 10 per cent. less, there would be a shrinkage of some 275,000 acres, which, at the average of 28 bushels

per acre, would involve a decrease of 7,700,000 bushels on last year's gross product—rather overset at 80,000,000 bushels, the crop being supposed to be over average. It is quite possible, however, that there may be no decrease at all. The young wheats, we are informed, are looking remarkably well, and if the present deficiency in the acreage should be made up by sowing such varieties as Talavera or Nursery during January or February, there may be a full yield of wheat in England after all. The chances are in favor of a decrease of about 10 per cent., but at present there is nothing approaching to certainty as to the area which the wheat crop of the United Kingdom will cover.—Bradstreet.

THE RUSSIAN GRAIN TRADE.

The serious inroads which India is making in the markets for Russian wheat is shown by Mr. Charles Marvin in his recent work on the oil wells of Baku. In a chapter of that work Mr. Marvin calls attention to a new aspect of the Russian grain trade which shows the effect the extension of railways in India has had. The city of Odessa in 1862 exported wheat to the value of £3,000,000, and in 1882 the exports were valued at £10,000,000, a great increase considering the competition of America and India. Russia at one time supplied England and the Continent with a large proportion of the wheat consumed. The Turkish war in 1877 affected Russia unfavorably, according to Mr. Marvin, enabling the United States to overtake her in the grain trade of Europe, and the exports of Russia fell from 180,000,000 bushels to 104,000,000 in 1880. While great progress has been made in India in opening up the country by railroads and enabling wheat to be sent to the market, but little progress has been made in Russia, and the grain trade is gradually slipping from her control and she is being supplanted by India in the markets of Great Britain and the Continent. The prosperity of Russia depends upon her grain trade, and these commercial considerations, aside from any other causes, would act as a greater incentive to Russia to upset the power of England in India, and possess herself of the only great source of supply for grain outside of herself and the United States. Mr. Marvin thinks that the fact that England is playing India against Russia for the purpose of bringing cheap wheat to England will produce a wheat crisis in Russia which will inevitably lead to revolution or war.

FOREIGN NOTES.

The chambers of commerce of London, Liverpool, Manchester, Paris and Marseilles have been exchanging communications with a view to taking joint action at the coming telegraph conference.

It is estimated that over three-quarters of a million bushels of wheat of the crop of 1884 have been exported from the Canadian North-West via Port Arthur during the past season, nearly 550,000 bushels of these shipments standing to the credit of the Ogilvie Milling Company. This is a notable increase on the season of 1883, when the company's exportations only reached 25,000 bushels.

The imports of flour into England during December; were 1,311,493 cwt., including 880,159 cwt. from the Atlantic ports of America, 151,683 cwt. from Germany, and 122,039 cwt. from Austria-Hungary. Thus Germany takes the lead of Hungary in supplying us with flour, a circumstance which has probably not happened before. It is also noticeable that our supplies of flour in December, were about one-third of the total of wheat and flour, which is, perhaps, as high a proportion as has occurred in any previous month.

In his report upon Algeria, M. Tirman, the Governor-General of that colony, states that the area of land cultivated by Europeans and natives is 45,000,000 acres, and that the agricultural population is nearly three millions, having at its disposal 363,747 implements, valued at £781,479. The area of land sown in grain was about 1,150,000 acres belonging to Europeans, and 6,150,000 acres belonging to natives, the total yield for these

7,300,000 acres being 40,377,293 bushels, or less than six bushels an acre.

Large farms in New Zealand are coming to be looked upon as failures. Mr. J. C. Firth, who has a 60,000 acre estate in the northern part of the colony, is about cutting it up into small farms. Special settlers, brought over from England to labor on the estate, are to be allotted farms of their own, on reasonable terms. The great establishment has been worked with the latest improved machinery and labor saving appliances, but has proven unremunerative. High wages have eaten up the profits.

The *Mark Lane Express* of January 5 publishes a number of reports from various districts in the United Kingdom, with reference to the wheat area this season, and in its editorial reference to the subject says: "Without a return from nearly every farm in the country, it would be impossible to state with confidence what the reduction in the area of wheat sown is. Judging from the reports sent to us, and duly considering the extent of the usual wheat area of the respective counties, we should estimate the decrease for England at between 10 and 15 per cent. If the price of wheat continues to improve, we think it likely that more wheat will be sown, and that it will not be safe to reckon on a reduction of more than 10 per cent. in the total area of the wheat crop for 1885."

Robinson & Hanley, of Doncaster, who built a new mill in 1882, and fitted it with the Carter automatic roller system, and who shortly after erected a new warehouse, and increased the capacity of the plant by putting in some additional machines, have lately pulled down their offices, old foreman's house, stable, etc., and are now busy erecting another new warehouse much larger than the first, new offices, stables, and cart sheds. In addition to the mill at Doncaster, Messrs. Robinson & Hanley are partners in a water mill on the millstone system at historic Conisbro'; being only leasehold they have determined to close it, and notwithstanding the large extensions at Doncaster, these gentlemen, under the title of Hudson, Robinson & Hanley, have recently purchased at Goole, which is about 20 miles from Doncaster, the site for another new mill of large capacity. The site is along the docks, and large cargoes of wheat can be elevated directed into the warehouse.

The preparations for the Paris Exposition of 1889 have advanced as far as the selection of a site for the buildings, the Champ-de-Mars, the place of the last exhibition, having been chosen unanimously by the Commission. For competitive trials, and other matters where much space is required, a sufficiently large territory will be reserved at Vincennes. Although Vincennes is at the other side of the city, there is no real objection to separating the experimental part of the exhibition by a considerable distance from the mere show. In fact, each department might be in a separate quarter of the city with positive advantage to those who go to the exhibition to learn, rather than to stare at a huge jumble of things which do not interest them in the least. The choice of the comparatively small Champ-de-Mars will save a considerable expense in construction, the Trocadero Palace, which formed one of the principal buildings of the exhibition of 1878, being close by, while the ground has already been graded and prepared for the purpose.

The year's failures, of 1884, as given by *Kemp's Mercantile Gazette*, are very instructive and somewhat surprising, for in spite of the acknowledged and general unsatisfactory condition of trade, the total amount of failures in all branches of trade are only 3,760, against 10,224 in 1883. The failures, in 1884, in England and Wales, are, indeed, less than in any previous year since 1867, the date of the establishment of *Kemp's Mercantile Gazette*; the average failures in the previous eight years were 12,061. The number of Bills of sales, too, was 787 less than in 1883. As far as the corn and cattle trades are concerned (these two being embraced under one head) the number of failures in 1884 has been 139, against 214 in 1883, and 232 in 1882. With regard to farmers the figures are very satisfactory, as far as they go, the failures in 1884 being 327; 1883, 514; 1882, 636; 1881, 1,014; 1880, 1,254; 1879, 1,405; 1878, 741; 1877, 461; 1876, 445; and 1875, 312. This improvement seems, however, to be more apparent than real, the Bankruptcy Act of 1883 having reduced the number of public failures, but greatly increased the number of private arrangements, which in 1884 are estimated to have amounted to 2,590.

While Russia is incessantly intriguing against England with the border tribes of India, the British lion, on the other hand, threatens to stir up serious trouble for the Muscovite in a way he has probably not anticipated—by the peaceful and economical instrumentality of the plowshare and not by the sword. At all events, Mr. Charles

Marvin, who has been traveling extensively through Russia, says that the agricultural outlook there is beginning to have a serious aspect. Wheat is the staple product, and until within a few years Russia was looked upon as the granary of Europe. The Russo-Turkish war of 1877-78 seriously affected this great trade, and enabled the United States not only to overtake Russia, but to shoot far ahead. Thus, in 1880 the exports fell from 180 million bushels to 104 millions; and although it rose in 1881 to 157 millions, the result was only due to the acceptance of unremunerative prices. Besides America, Russia has now India for a rival. Mr. Marvin is of opinion, therefore, that England's apparent determination to play off India as a great cereal-producing country against Russia, for the express purpose of bringing cheap grain into the British markets, is almost certain before long to bring a crisis in Russia which will lead to revolution or war.

In a lecture recently delivered at Dundee, Scotland, Mr. John Long said: "Few people nowadays have any idea of the hardships and sufferings of the poor towards the end of the last and the first twenty years of the present century. The quartern loaf rose to the following high prices in: 1790.....8d. 1806.....13d. 1795.....9d. 1807.....13½d. 1796.....8d. to 15d. 1808.....12½d. 1797.....8d. 1809.....13d. to 14d. 1799.....13d. 1810.....14½d. 1800.....19d. 1811.....15d. 1801.....21d. to 22½d. 1812.....17d. to 20d. 1802.....12d. 1813.....17d. 1803.....9d. 1814.....13½d. 1804.....16d. 1815.....12d. 1805.....14d. to 16d. 1816-17.....16d. The long continuance in successive years of the high price of the loaf was very remarkable. Happily, such times could scarcely by any possibility now return. One cause of the present scarcity of work is the plethora of produce all over the world, making it less necessary to transfer food from one country to another. That caused shipping to be less required, and that again fewer ships to be built, and hence the dullness in the ship-building trade. He was glad to learn just before entering the meeting that the local difficulty in that trade had been adjusted, and that some hundreds of hands were likely to be employed before many weeks were over. Absolute dearth or famine need not now be dreaded, for the world was tributary to our wants."

The reported stocks of wheat at the close of 1884 at the prominent points mentioned in the United Kingdom compare with corresponding time in 1883 and 1882 as follows:

	1884.	1883.	1882.
London.....	375,000	975,000	380,346
Liverpool.....	380,000	873,200	617,875
Hull.....	146,000	320,000	130,000
Gloucester.....	122,900	155,500	81,400
Bristol.....	112,000	125,000	77,102
Glasgow.....	110,165	127,632	63,177
Leith.....	30,086	43,947	6,764
Dublin.....	101,359	178,024	185,934
Newry.....	13,300	11,000	13,300
Londonderry....	27,500	11,000	17,750
West Hartlepool.	7,655	32,077	5,915
Belfast.....	48,000	52,794	56,300
Sunderland.....	....	....	12,313
Newcastle.....	....	8,000	16,829
Galway.....	....	18,000	....
Waterford.....	....	....	....
Fleetwood.....	43,731	....	....
Total, qrs.....	1,526,696	2,939,574	1,665,005
Flour, equal qrs..	480,103	650,000	534,726
Total stock, qrs..	2,006,799	3,589,574	2,199,731
On passage, qrs..	2,036,000	2,094,000	2,382,000
Grand total, qrs..	4,042,799	5,683,574	4,581,731
Equal in bushels	32,342,392	45,468,592	36,653,848

AN INTERVIEW WITH A LOCK EXPERT.

"Locks? Locks won't keep burglars out. Why, I can open any kind of lock that has ever been invented, without key or combination." The speaker was a close-shaved, clean-cut, penetrating-looking man. He stood in a blacksmith's shop on Four-and-One-Half street, Washington, dangling the dial of a combination lock on the end of a bent wire.

"They open if he looks at 'em," said a youth, who stood by, interestedly examining the bits of broken locks, old keys, drills, and odds and ends of wire, brass and steel which were scattered about the shop. The sign in front of the door read, "Practical Locksmith and Safe-Opener."

"Do you make a practice of breaking open safes?" asked the interviewer.

"I open safes when nobody else can," replied the smith, giving the scribe a keen inquiring look which might have opened him had he been a lock. "That is, I open safes when the locks are out of order or the combinations lost. Sometimes a man will oil the lock of his safe, and it gets gummed up so that the tumblers won't work and he can't get it open. Some men are forgetful and lose their combination. Safes are sold at sheriff's sale sometimes, and the owner, being mad, won't give up the combination. When anything of that kind happens they send for me."

"Do you blow them open?"

"No. If the lock is broken so that it won't work I drill a little hole alongside the dial, and pick the lock with a small bit of wire. If the lock is all right, only the combination is lost, I go to work to find it, and don't deface the safe at all. It takes me from three seconds to six hours to open a safe, according to the kind and method I employ."

"But how can you find the combination? Does it not take a long time?"

"By testing. As to the time, it depends upon circumstances. If I know the man who set up the combination I can find it in a very few minutes. If I don't, it takes longer. You see, I study the character of the man,

and if I know him pretty well I can strike the combination through his character. When a stranger comes to me to say he has lost his combination I make a study of him, and in nine cases out of ten I can hit it the second or third trial. But if he did not set the combination himself it is more difficult. Then I study the lock instead of the man, and I am sure to get it open in a few hours. Oh, no! It wouldn't do to tell you how. Safe-openers are dangerous in a community. They are always watched by the police. They keep an eye on me all the time. I have them trying my door all hours of the night, and there's generally one somewhere around. No, I couldn't teach you to open safes. But you might not find it easy to learn. There is a kind of association between me and locks—an understanding, as it were. We have the same way of thinking."

"Could you open a burglar-proof time safe?" asked the scribe.

"I can open in five or six hours the best lock that was ever made. These little office safes I wouldn't put that much time on. They don't pay enough. I just take a hammer and break the knob off, and can get into the safe in about three seconds."

"What do you get for opening a safe?"

"For a little three-second safe I get \$10. For large safes, like they have in banks and

broker's offices, and where they don't want the lock injured, I get \$250."

"Could you open the great safe in the United States Treasury?"

"Easily. I could get rid of the time lock and everything in six or seven hours, and wouldn't make any particular fuss about it, either. No safe was ever made but it had some weak point, known to the maker, so he could get into it in case the lock should fail to respond. If there wasn't, they would have to break the concern all to pieces if the lock broke. Now, I know where to find these weak places. I can strike within $\frac{1}{4}$ inch of it every time. It is generally covered over by a thin sheet of steel or boiler iron, and by cutting away a block 3 or 4 inches, which is easily done, I could drill into the best safe that has ever been made. It would not be any trouble for burglars to get into the treasury safe if they understood locks as I do."

"Has your knowledge of locks ever got you into any trouble with the police?"

"No, not seriously, though, as I say, they always watch me. Down in Oil City, though, I created quite an alarm one night, and came near being captured as a burglar. Some fellows got to tampering with the safe in a large hardware store there, and somehow got the combination changed so that no one knew how to open it. The proprietor sent for me, and I told him I could open it, but as

I was quite busy I should have to wait until evening. I closed my shop a little after dark and went over to the store and got to work on the job. I had been working a couple of hours, when somebody banged at the door and called for me to surrender without resistance if I did not want to be shot. The proprietor was, fortunately, in the store at the time and opened the door. There was a squad of police armed and the house was completely surrounded, so I could not escape. The patrolman had seen me at work on the safe and gone off and roused the town, and the whole police force had been called out to surround the building. The proprietor explained, and I went on with my job."

"But locks don't do much good against experts," he continued. "A gang of burglars would find no trouble in robbing the treasury. It is strange they have never attempted it. As to ordinary locks I could take an ordinary case-knife or a piece of stiff wire and open every door on the avenue from the Capitol to the treasury. And it would not take me much longer than it would to walk that distance. No door would take me longer than a couple of seconds. I can open any trunk with simply a little tap with a hammer, and won't injure the lock in the least. If you forget your combination come in."

JONATHAN MILLS UNIVERSAL FLOUR DRESSER

Guaranteed to be superior to any other bolting device for clear, clean bolting or rebolting of all grades of Flour.

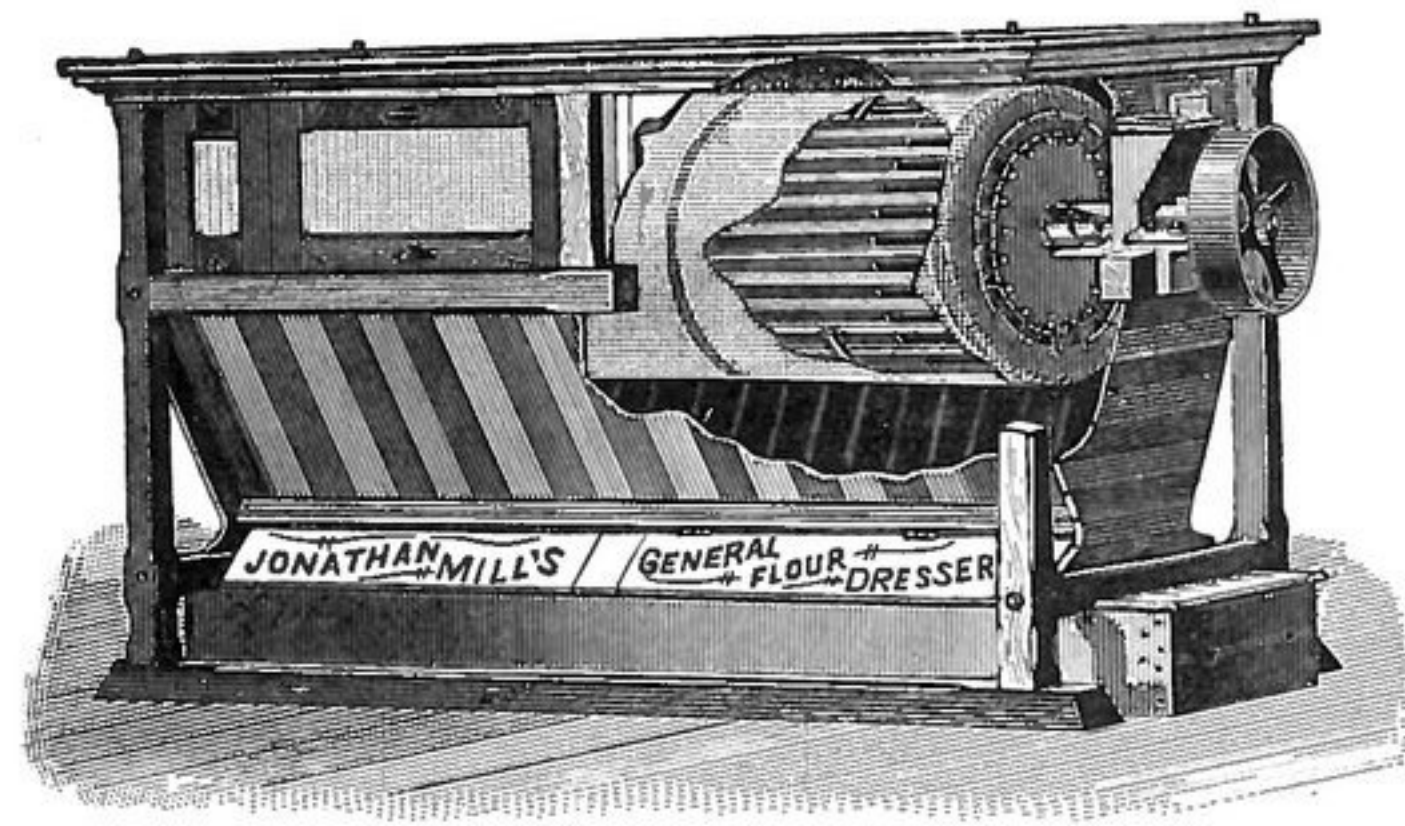
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SLOW SPEED. OCCUPIES SMALL SPACE, AND HAS IMMENSE CAPACITY.

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Send also for 150 Page Catalogue Describing their Engine



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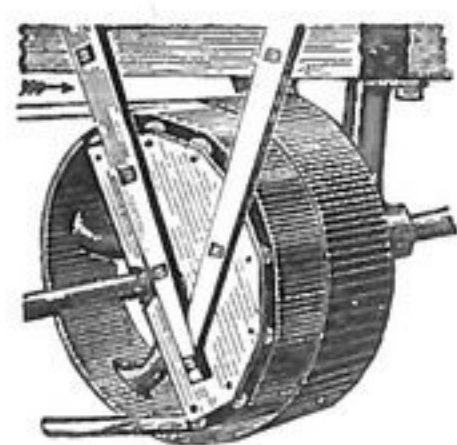
Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address **GEO. W. HEARTLEY**, No. 297 St. Clair Street, Toledo, O. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

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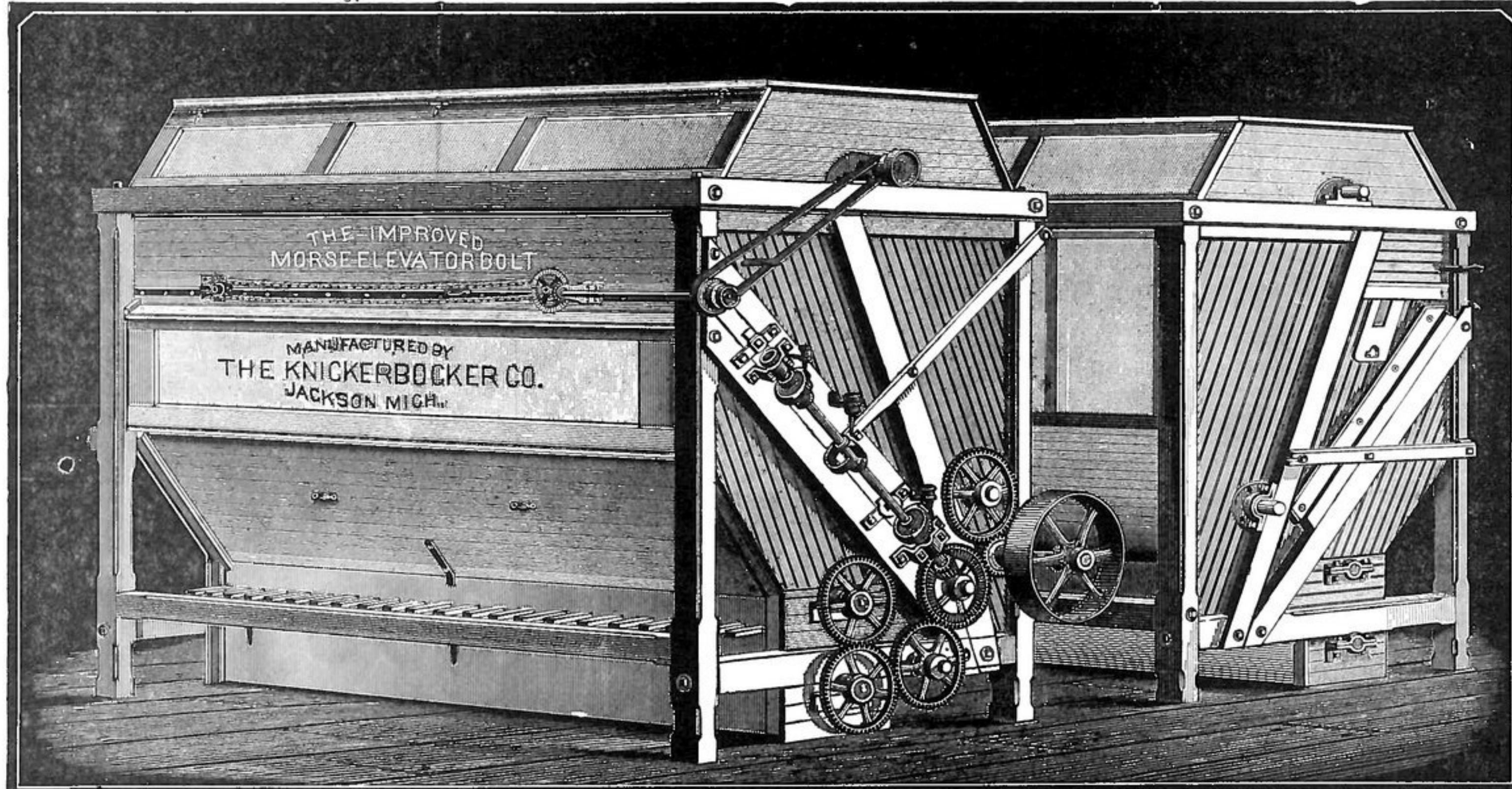
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The Improved Morse Elevator Bolt.



DEMONSTRATED IN OVER 100 MILLS TO BE THE BEST BOLTING DEVICE KNOWN.

THE KNICKERBOCKER CO., JACKSON, MICH.

ODELL ROLLER MILLS ARE MADE ONLY BY **STILWELL & BIERCE MFG. CO., DAYTON, O.**



Office of THE MILLING WORLD,
Buffalo, N. Y., Jan. 28, 1885.

Little legitimate activity prevails in grain circles. A bearish feeling on wheat has been growing, and with the bearish feeling has also grown a short interest. Cable news lower and very dull. Private cable news was even more depressed than public, as it not only quoted wheat lower, but also brought orders to sell wheat. The visible supply, Chicago calculation, says the N. Y. Commercial Bulletin, showed an increase of 210,000 bushels, while the New York statement showed a decrease of 200,000 bushels. The crowd were disposed to sell wheat, and so considered the Chicago report as correct. The interior news was not re-assuring, and reports of a large movement of wheat were received. The exports of wheat, however, continue large. Last week they assumed quite heavy proportions, and amounted to 1,527,000 bushels to Europe only, and 200,000 barrels of flour, equal to a total of 2,427,000 bushels. The pressure to sell long wheat in scattering lots broke the market at the opening. Later, several blocks of wheat came out, but were quickly absorbed by commission houses and traders buying against "puts." This held the market temporarily, but about 1 o'clock selling became heavy again, under which prices gave way. Estimates of the invisible supply of spring wheat in the United States have been made by Minneapolis parties, as follows: Amount shipped to Duluth, Minneapolis and St. Paul, 28,500,000 bushels; amount shipped to Chicago and Milwaukee, 5,000,000 bushels; bread and seed, 13,500,000 bushels; in farmers' hands for sale, 9,600,000 bushels. Total, 63,600,000 bushels. The granger roads are taxed to their utmost to meet the demand made upon them for transportation of grain, and this fact would seem to point to the conclusion that a large quantity of grain is at the primary markets awaiting shipment to points of distribution. The "C., B. & Q." road is 1,500 cars behind its orders, and the Rock Island road has orders for 1,000 cars more than it has at command at the moment, and 800 cars of corn have been ordered from Omaha to Baltimore. It is thought that it will take the Western roads two weeks to catch up with their orders. The Eastern roads are blocked with freight, and have not enough engines at their command to haul the loaded cars.

The flour market has remained quiet, with no more nor no less than the usual interest displayed by either buyers or sellers. Prices are without material change. Receipts continue to be very small. The millers West are talking as firm as ever, while the buyers are apparently willing to talk to sellers and are not so offish as they were a few days ago. Small receipts and reduced stocks are relied upon to maintain prices. Exporters are evidently in want of flour, but are not able to meet holders' views. The market for rye flour has been moderately active and firm in tone. Buckwheat flour is in moderate demand and, without decided change in prices, the market is steady in tone; \$1.75 a 1.90 is the range for the general business, and \$1.95 an extreme price for fancy lots. For corn goods there is a slow demand, but the market still shows a steady tone. Mill-feed is fairly active at strong figures, with coarse feed scarce and tending upward; track receipts continue light, and offerings of city feed moderate.

FOREIGN EXCHANGE.

The market for sterling was somewhat more active after a reduction in posted rates,

and at the close rates were firm, especially for long bills. Posted rates closed at 4.83a. 4.88½ and 4.87½. Actual rates were at 4.82½ a. 4.88 for sixty days, 4.86a. 4.86¾ for demand, 4.86½ a. 4.87½ for cables and 4.80½ a. 4.81¼ for commercial bills. Continental bills dull and nothing doing. Francs, 5.22½ a. 5.21½ and 5.20a. 5.18½; reichsmarks, 94½ a. 94¾ and 95a. 95½; guilders, 40 and 40¼. The closing posted rates were as follows:

	60 days.	30 days.
London.....	4 83½	4 87½
Paris francs.....	5 21½	5 18½
Geneva.....	5 20½	5 18½
Berlin, reichsmarks.....	94¾	95¾
Amsterdam, guilders.....	40½	40¾

BUFFALO WHEAT MARKET.

BUFFALO, N. Y., Jan. 28, 1885.

The wheat market is dull and heavy, the late advance not being sustained. No. 1 hard offered at 96c. There is very little No. 1 Northern here and it is held firm at 95. No. 2 hard, none offering in the market. No. 1 white winter wheat offered at 93a.94 choice lots. About 50,000 bushels of Northern wheat was sent to New York for export last week. Corn is scarce and in good demand; No. 2 straight is held at 49a.50; No. 3 yellow prime 47; No. 3 mixed 46; lower grades 43a.45. Oats nominal. The increase in the amount of wheat in sight stored last week was 243,000 bushels, the new crop is pouring into Duluth at the rate of about 60,000 bushels daily. There is nearly 1,800,000 bushels of Duluth wheat stored here, but we look to its all being wanted before navigation opens.

J. S. MCGOWAN & SON.

BUFFALO MARKETS.

FLOUR—City ground clear Northern Pacific spring \$4.75@5.25; straight Northern Pacific spring, \$5.25@5.75; amber, \$5.00@5.25; white winter, \$5.00@5.25; new process, \$5.75@6.00; Graham flour, \$4.25@4.50. Western straight Minnesota bakers, \$5.00@5.25; clear do, \$4.75@5.25; white winter, \$5.00@5.25; new process, \$6.25@6.50; low grade flour, \$2.75@4.00. OATMEAL—Ingersoll \$5.00; Bannerman's \$5.25; Akron \$5.50. CORN—MEAL—Coarse, 90c; fine, \$1.10 per cwt. RYE FLOUR—In fair demand \$4.00@4.25. WHEAT—Nominal. For No. 1 hard Northern Pacific at the Call Board, 96½c, asked cash and Jan. 97c. asked Feb., 97c. bid April, 98c. asked 95½c. bid May, 98c. asked June; for No. 1 Northern 96c. asked cash, 97c. asked May. Holders asking 91@92c. for No. 2 red and 92@93c. for No. 1 white. CORN—Quiet. For No. 2 at the Call Board, 47c. asked 45c. bid May, 49c. asked on track, 48c. asked for No. 3 yellow on track. Sale ten car-loads No. 8 yellow at 47½@48c., one do. No. 3 mixed at 47c. and one do. No. 4 mixed at 46c.—all on track. OATS—No. 2 mixed at 34½@35c; No. 2 white at 35@35½c; State from wagons, 32@34c. BARLEY—Firm. Sales 8,000 bu. Canadian at 82c., and 4,000 bu. Minnesota at 67c. RYE—No. 2 Western nominal at 74@75c.

J. E. Stealey & Company, of Clarksburg, West Virginia, are enlarging the capacity of their flouring mill by the addition of more roller mills and machinery, which they have purchased of Nordyke & Marmon Company, of Indianapolis, Ind.

CANAL VS. RAILROAD.

We clip the following from State Engineer Sweet's Annual Report, sent to the Legislature on Jan 26. The business of the canals has shared in the depression which has been common to all industrial movements and enterprises of the country during the past year. The total amount of freight moved on the State canals during the season of navigation just closed was 5,009,488 tons, and comprised the following articles: Products of forest, 1,671,706 tons; products of agriculture, 1,264,237 tons; products of manufacture, 205,006 tons; merchandise, 300,450 tons; other articles, 1,568,059 tons. Total, 5,009,488 tons. This tonnage is less than that moved on the canals last year by 654,588 tons. Not only has the volume of coal freight diminished, but the rates of the freight have been unprecedentedly low during last season. In both these respects, however, the canal business suffers in common with the rail-

roads which compete for the same freights and to whose warfare among one another may be attributed the lowest freight tariff ever known. The reported operations of the New York Central Railroad for 1884 show 688,024 tons less freight than in 1883, and the New York and Erie 2,538,685 tons less freight than in 1883. A new railroad line, the West Shore, competing for the same business, has, however, been opened within the past year, but its whole tonnage was much less than one third the loss of freight suffered by the Central and the Erie roads.

The average rate of freight on these roads for all classes of articles shipped was, in 1884, .740 of a cent per ton per mile, against .845 of a cent in 1883. The average rate of canal freight during 1884 was .27 of a cent per ton per mile, against .34 of a cent in 1883. The canal has suffered and the public temporarily gained by one of these periodic railroad wars brought on in part by the fact that the meagre crops in 1883 and the bad market of 1884 made the volume of business too small to permit them to be prosperous and contented. The total earnings of all the railroads of the State for the past year have been in round numbers \$126,204,000, against \$133,980,000 for 1883. The charges against earnings other than dividends were for 1884, \$118,800,000, against for 1883, \$114,027,000. Thus the earnings decreased \$7,576,000, and the expenses increased \$4,730,000, showing an aggregate loss compared with the operations of 1883 of \$12,459,000, or nearly ten per cent. of the gross operations of the railroads of the State, though over \$44,000,000 had been added to the railroad capital in the State during the year.

AMERICAN FLOUR AND ENGLISH MILLERS.

"Bradstreet's" recently contained a very full and interesting statement from a London correspondent on the manner in which the American import is affecting the British miller. Before reciting the "why and wherefore," as explained by this correspondent, it may be well to give a few summary figures. In 1869 England's flour imports were 5,401,555 cwts., only 1,711,000 cwts. of which came from the United States. In 1878 the total import had increased to 7,828,079 cwts., of which 3,621,881 was from the United States. In 1880 the United States furnished 6,873,829 cwts. out of a total import of 10,558,312. In 1883 England increased her import of flour to 16,329,312 cwts., and the United States supplied 11,270,459 cwts. of that amount. These statistics sufficiently indicate the rapidly growing place foreign flour is assuming in the English market, and also point to the United States as the chief source of the supply. In 1869 we sent wheat and flour to England in the ratio of eight to one. In 1883 the propor-

tions had so shifted as to be expressed by the ratio of five to two.

The effect of this upon milling in England is almost paralyzing. In the great cities like London, which are growing so rapidly in population, no new flour mills are going into operation. In the country places the number of mills is actually declining. Seven reasons are assigned by the English millers in explanation of the fact that the American article is superceding their own.

They assert, 1. That American flour is made from wheat of greater strength than that of England, or than the average of imported wheat. The best hard wheat, they claim, is mostly retained and manufactured in America. English wheat ordinarily is soft and damp. Indian wheat makes inferior bread. 2. The extensive scale of manufacture in the American mills gives them an advantage. 3. The machinery of American mills is superior to that of all but a few exceptionally good English mills. Rollers are not in general use in England, and are not regarded as suitable for English wheat, except crops grown in unusually dry seasons. 5. The superior economy of the flour transit as compared with that of wheat. English millers cannot import northwestern hard wheat, and compete with the hard wheat flour made in Minneapolis, because of the saving in the transportation of the lesser bulk. 6. American flour comes into immediate competition with British flour, there being generally only one commission agent between the American miller and the English baker. This economy of distribution is of much importance to the American article. 7. English bakers like to use American flour because of its unquestionable age. The superiority of flour that is six or eight weeks old over that which is new made is said by the bakers to be very considerable. They cannot always be sure of the age of the flour furnished them by the English mills. Another point mentioned is to the effect that the bakers are buying American flour much more freely since it began to come largely in bags, because bags are easier to store away than barrels.

Just what the English millers can do to hold their own, is in dispute. Their disadvantages seem to be too many and too serious to be successfully overcome. Some of them are beginning to talk of a protective duty on flour; but the English people will never submit to high-priced breadstuffs for the sake of the milling industry. According to the present outlook, the Minneapolis millers are to become the undisputed masters of the situation.

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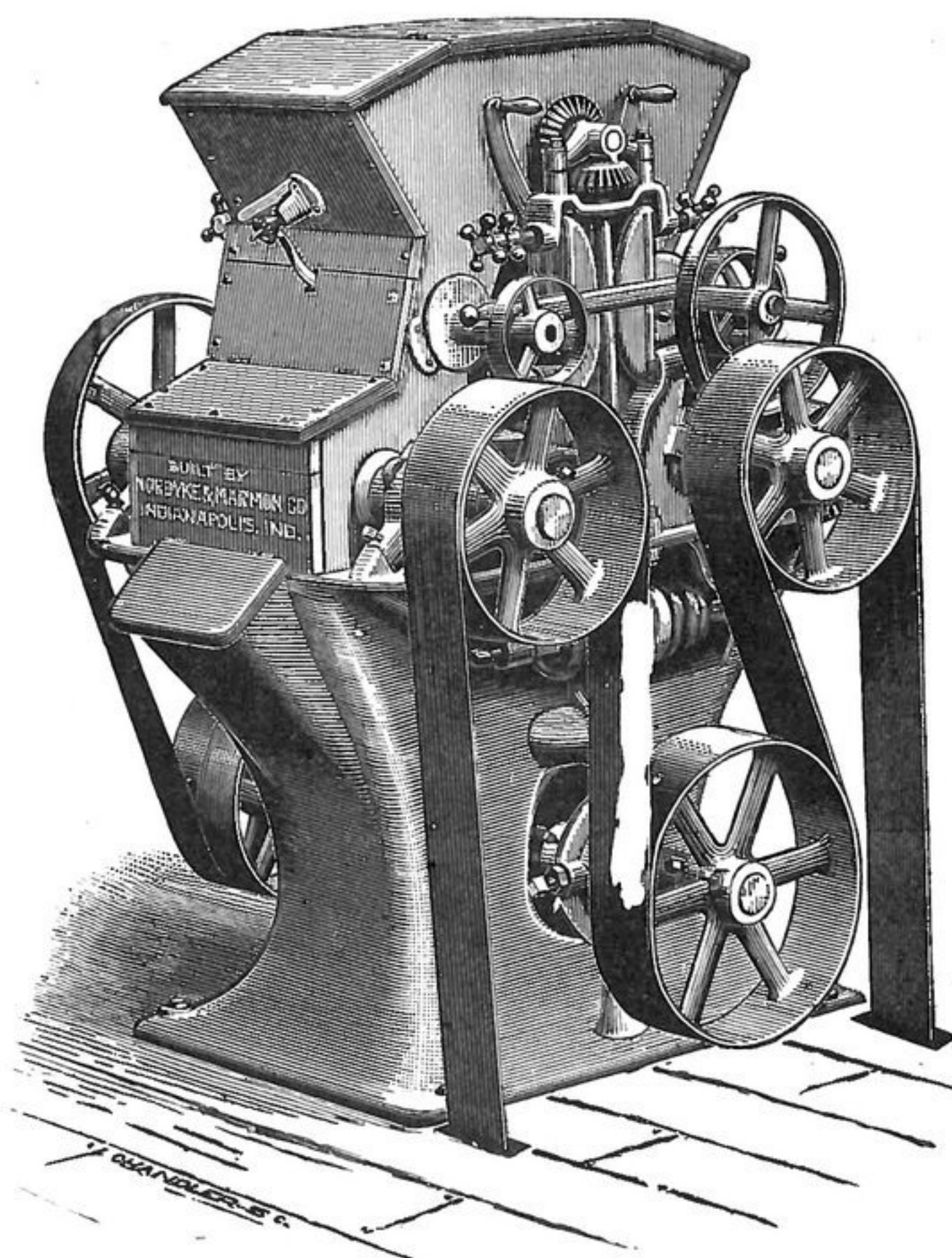
NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Builders from the Raw Material of

ROLLER MILLS, CENTRIFUGAL REELS, FLOUR BOLTS.

WE ARE THE SOLE OWNERS FOR THE UNITED STATES OF ALL THE PATENTS UPON THIS ROLLER MILL.

This Is the Only Roller Mill Made Having All the Essentials Needed In Successful Milling.



100 BARREL MILL IN TENNESSEE.

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

MEMPHIS, TENN., Dec. 16, 1884.

Gentlemen: Our mill, as planned and diagramed by you, has been in steady operation for near one year past, and in proof that you have given us a successful job, we will simply say that in the face of very dull trade, and while other mills were running on short time, we have been running full handed, in order to supply a genuine demand for our flours. We must also notice, that although you only promised us 100 bbl. capacity, we easily make 140 bbls per day without deteriorating in grades of flours. We use No. 2 wheat, and consume 4 bushels and 28 lbs. in making a barrel of flour. We make about 26 per cent. of very high patent, 68 of bakers' and 6 per cent. of low grade. Yet our mill is so constructed that we may vary these percentages to suit various markets. We have always been victorious in the sharpest competition, and from the first day of starting we have kept the highest position among all roller mills either located or represented in this region.

Yours truly,

G. W. COWEN & CO.

500 BARREL MILL IN ILLINOIS.

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

OFFICE OF DAVID SUPPGER & CO.,
HIGHLAND, ILL., Jan. 10, 1884.

Gents: We started up our mill in June last year, and it gives us pleasure to say that your Roller Mills are doing splendid work and give us no trouble. Your milling program required no changes, and concerning yields, we get all the flour from the offals, and we sell our best grades in the principal markets of the United States at the highest prices offered for any flour. All the machinery made by you is first-class, and we would not know where to purchase as good.

Yours respectfully,

DAVID SUPPGER & CO.

125 BARREL MILL IN INDIANA.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.

LAPEL, MADISON COUNTY, IND., Jan. 10, 1884.

Gentlemen: The 125 barrel All Roller mill you built us has been running all summer, and does its work perfectly. Before contracting with you for this machinery we visited many Roller Mills throughout the West and Northwest, built by the different leading mill furnishers, and from all we could see, those built by you seemed to be giving the best satisfaction, and this is why we bought our machinery of you. Our mill comes fully up to your guarantees, and the capacity runs over your guarantees. The bran and offal is practically free from flour, and our patent and bakers' flour compares favorably with any we have seen elsewhere. I don't think anyone can beat us. Your Roller Machines are the best we have seen; they run cool, and the interior does not sweat, and cause doughing of the flour. Judging from our success, we would recommend other millers to place their orders with you.

Yours truly,

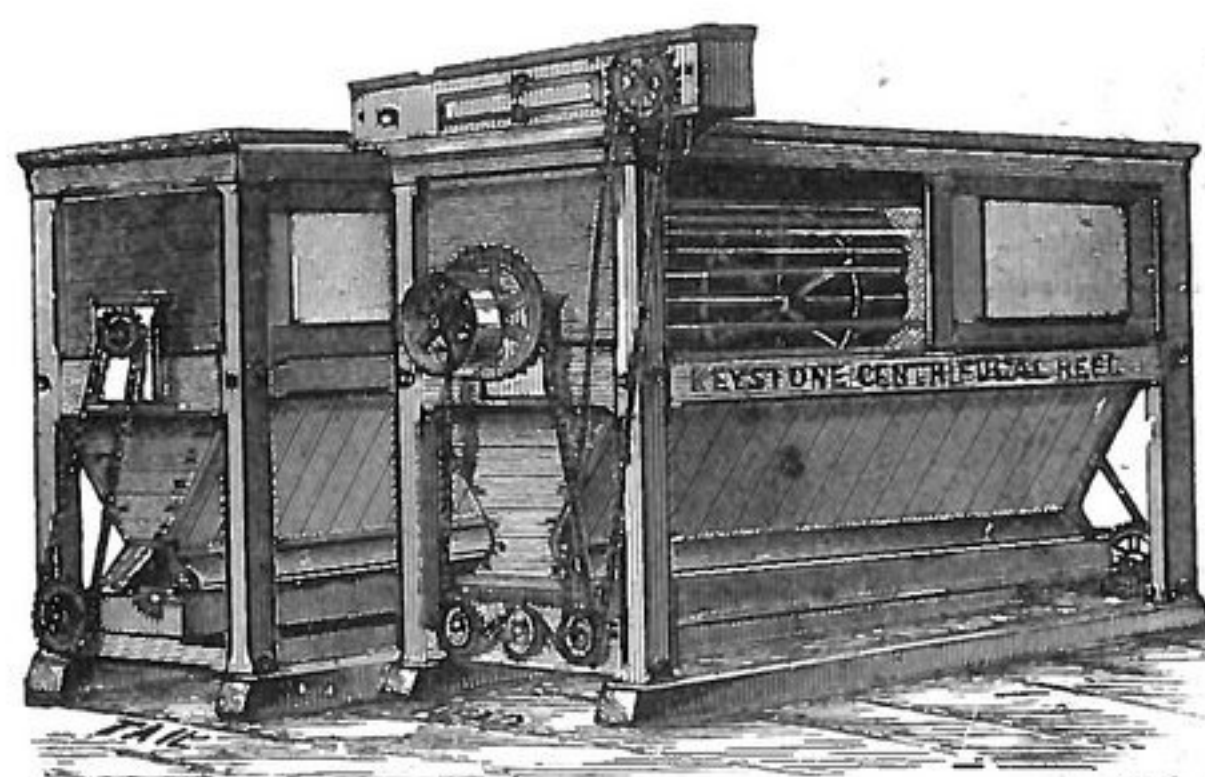
J. T. FORD.

Letters on file in our office from a large number of small roller millers giving as favorable reports as above. A portion will be published as occasion demands.

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Drag Brush Feed, Tightest Heads, Best Results. Cheapest and Best on the Market. Adapted to all Kinds of Milling. The New Drag Feed Thoroughly Protects the Silk. Sent on Trial to any Responsible Miller.

ROLLER MILLS, SCALPING REELS, PULLEYS, SHAFTING AND ALL KINDS OF MILL IRONS.

Full Stock of Dufour and Dutch Anchor Bolting Cloth.

BEST QUALITY FRENCH BURR MILLSTONES, FOR MIDLINGS, WHEAT AND FEED.

Leather, Rubber and Cotton Belting, Smut Machines, Purifiers and everything belonging to a Flour Mill furnished at Lowest Market Prices. For Circulars, Prices and Full Particulars, address the Manufacturer,

C. K. BULLOCK, 1357, 1359, 1361 RIDGE AVE., PHILADELPHIA, PENN.

UNION STONE CO., BOSTON, MASS.

PATENT MILLSTONE CEMENT.

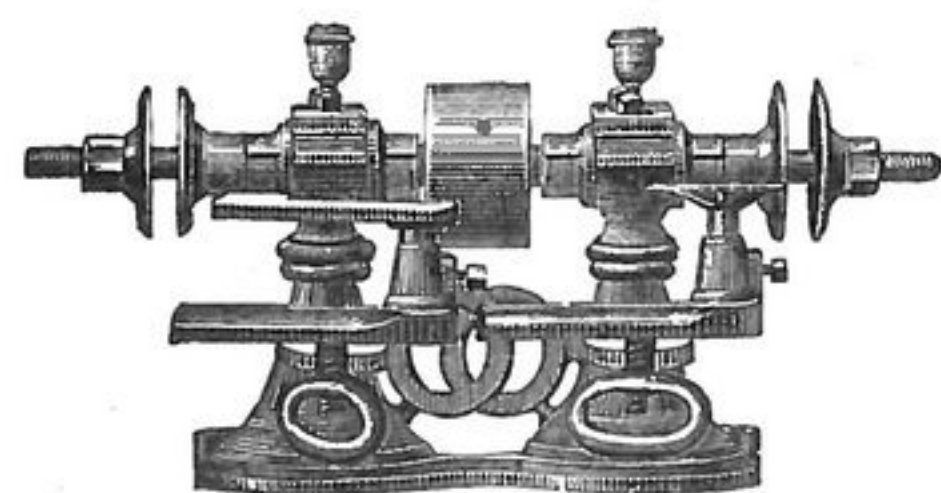
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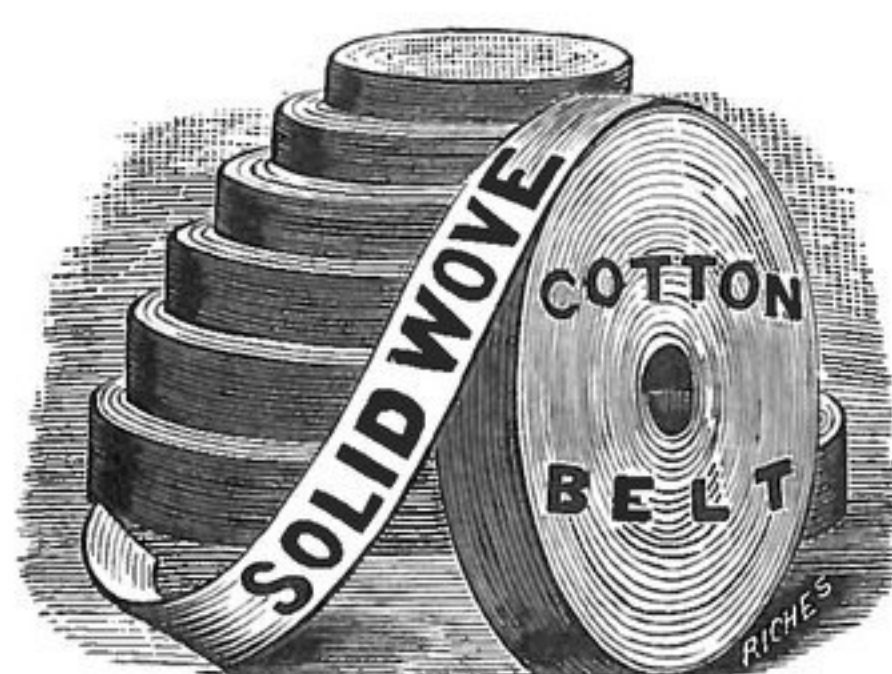
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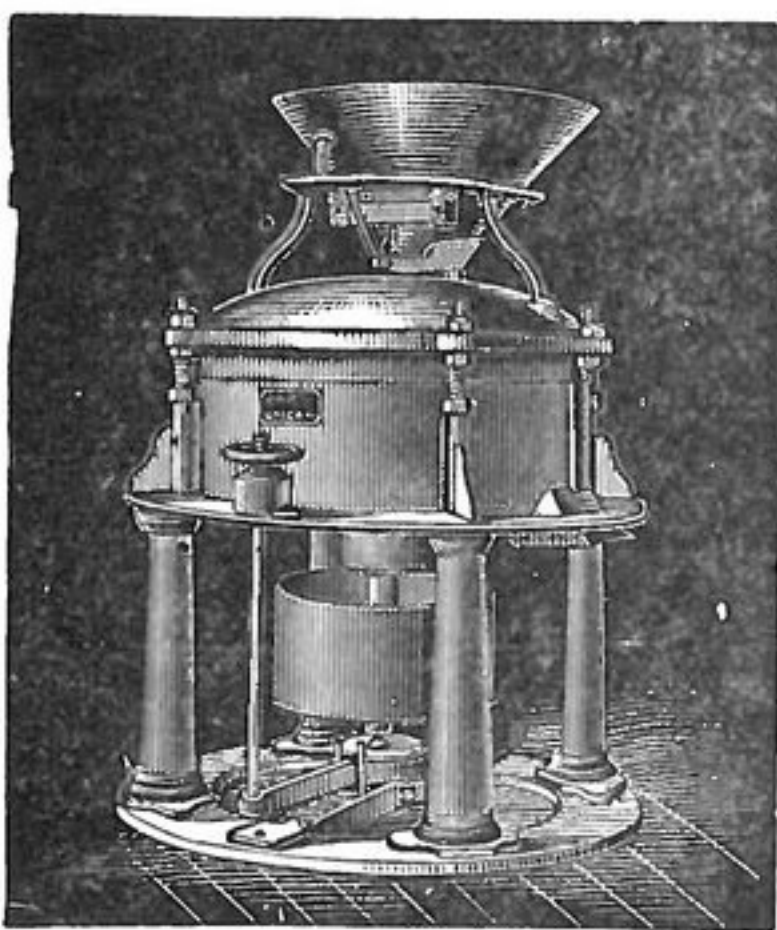
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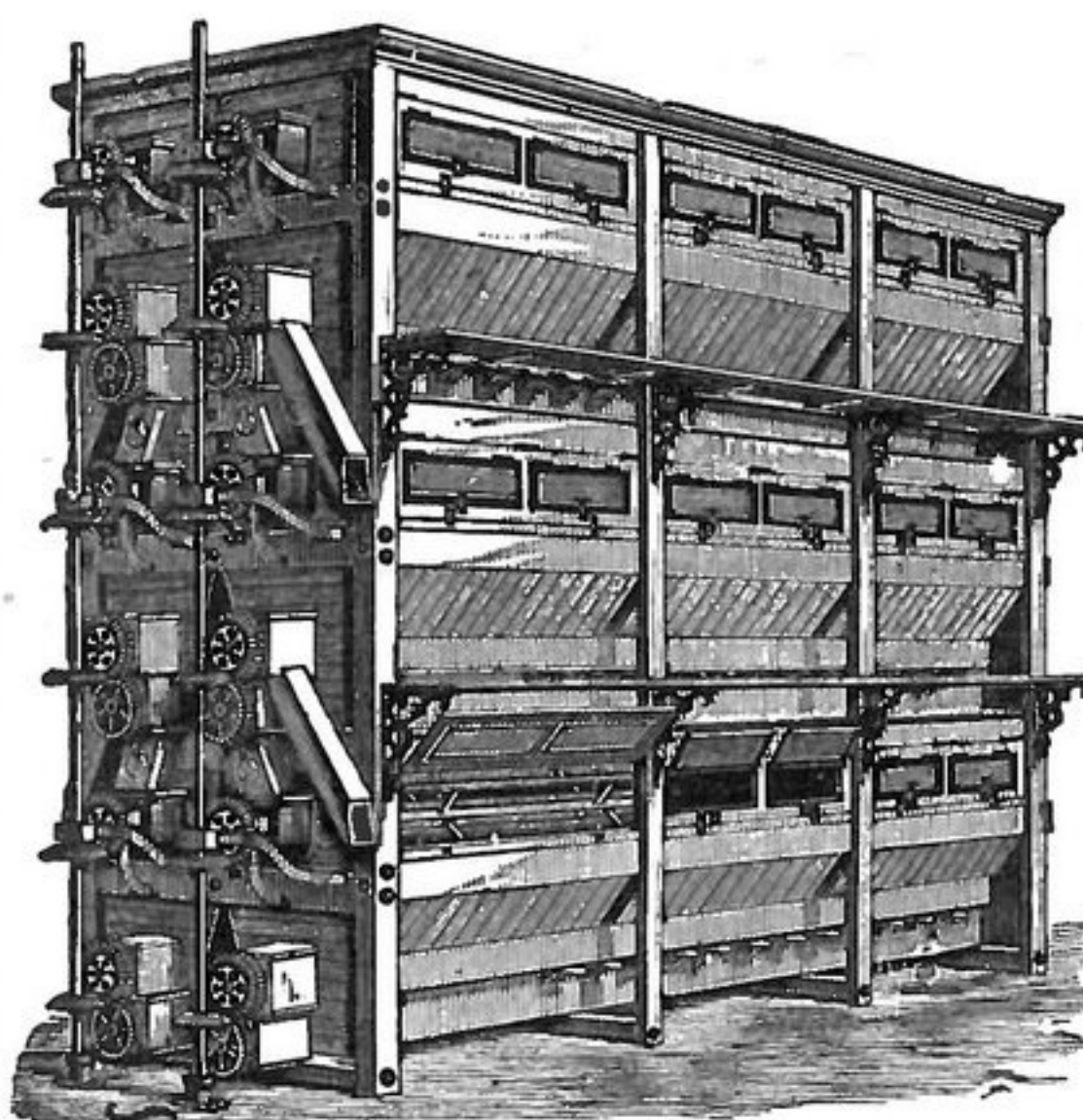
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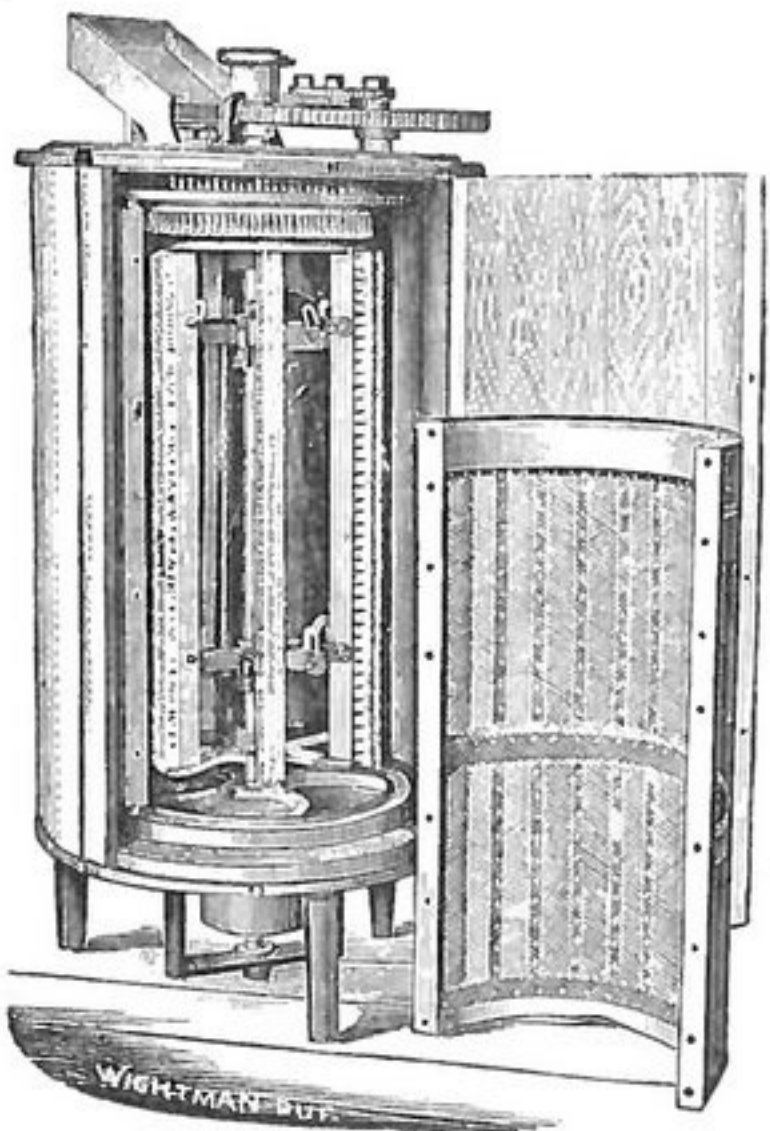
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